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ANNUAL REPORT

Environment Council of Alberta

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ENVIRONMENT COUNCIL OF ALBERTA

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Environment Council of Alberta

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Environment Council of Alberta
8th Floor Weber Centre
5555 Calgary Trail Southbound NW
Edmonton, Alberta
T6H 5P9

Phone (403)427-5792

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LETTER OF TRANSMITTAL

Lieutenant-Governor in Council
Legislative Building
Edmonton, Alberta

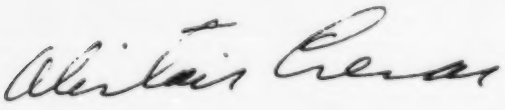
Honorable K. Kowalski
Minister, Department of Environment
132 Legislative Building
Edmonton, Alberta

Sirs:

I have the honor to transmit, herewith, the Annual Report of the Environment Council of Alberta for the year 1987, as required by Section 7(1)(h)(i) of The Environment Council Act.

I have the honor to be, Sir,

Your obedient servant,



Alistair D. Crerar
Chief Executive Officer
Environment Council of Alberta

CONTENTS

1. MESSAGE FROM THE CHIEF EXECUTIVE OFFICER 1

2. POLICY AND PROGRAM REVIEW 5

- 2.1 Ministerial Reports 5
- 2.2 Review Panel On Environmental Law Enforcement 24
- 2.3 Alberta Conservation Strategy 25

3. PUBLIC HEARINGS 26

4. PUBLIC ADVISORY COMMITTEES 28

- 4.1 Organization of the Public Advisory Committees 28
- 4.2 Membership 29
- 4.3 Chairmen's Reports 29
- 4.4 Alberta Conservation Strategy 42
- 4.5 Annual Joint Meeting 45
- 4.6 Responses To 1983 Resolutions 48
- 4.7 Public Communications 50

5. OTHER ACTIVITIES OF THE ENVIRONMENT COUNCIL 51

- 5.1 Canadian Environmental Advisory Councils 51
- 5.2 Alberta Environment Awards Committee 51
- 5.3 Environment Week Association 52
- 5.4 Computer Bulletin Board 52
- 5.5 Environmental Poster Collection 53
- 5.6 Water Resources Telecourse 53
- 5.7 Co-operative Assistance 53

6. ADMINISTRATION 54

- 6.1 Organization Of The Environment Council 54
- 6.2 Fiscal Report 55
- 6.3 Personnel 57
- 6.4 Library Services 57
- 6.5 Editing Services 58
- 6.6 Office Automation 58

APPENDIX A. PUBLIC ADVISORY COMMITTEE REPRESENTATIVES 60

APPENDIX B. LIST OF PUBLICATIONS 63

APPENDIX C. LOCATION OF INFORMATION CENTRES 66

APPENDIX D. LOG OF NEWS RELEASES 68

1. MESSAGE FROM THE CHIEF EXECUTIVE OFFICER

For the Environment Council of Alberta, 1987 was a year of both triumph and disappointment. First the triumphs, and there were a number of them. Throughout the year steady progress continued on the development of a draft Conservation Strategy for Alberta. Though the bulk of the work continued to be borne by the Public Advisory Committees and interested volunteers from outside PAC, more and more assistance was provided to the process by the Council's research staff. By the end of 1987, everyone from the Research Division was involved in some aspect of the Conservation Strategy, assisting the different sector groups in the identification of problems, in developing statements on the situation in a particular sector, or in the identification of alternatives. PAC and the Steering Committee remained in charge of the process, responsible for choosing the approach and approving the statements developed, whether these were the product of volunteer contributors or of Research Officers.

No new reports on the Conservation Strategy for Alberta were released during 1987, though the *Prospectus* was revised and reprinted. However, the production process was in full operation, the pipeline is full, and the first reports will be distributed early in 1988.

It is worthwhile to reiterate the scope of the Strategy as revealed by the sector reports and associated materials. The sector reports are expected to cover:

Agriculture
Biological Diversity
Coal
Environmental Education
Fish and Wildlife
Forestry
Heritage Resources
Minerals
Oils and Gas
Parks and Outdoor Recreation
Renewable Energy
Tourism
Urban
Wetlands

These sector reports are not intended to be an encyclopedic review of the nature, importance, or promise of each sector. That has been done often enough before by knowledgeable specialists. What the sector reports will focus on is the relation of the sector to all other sectors that impinge on it and on the interconnections of the great web of life that is Alberta's environment. The objective is to identify ways to reduce the frictions and to increase compatibility between sectors and to find ways to handle the problems that fall between the cracks because of the compartmentalized mandates of government and industry.

You will notice that each of the sectors identified represents an activity that utilizes some aspect of the natural resource base of the province. There is no sector dealing specifically with the air, water, or land; however, the natural resource base and the environment underlies each of the sectors examined. Indeed, the continued health of each sector, the prosperity of Alberta, and the continued well-being of its citizens is dependent on the integrity and sustainability of the resource base.

Additional to the sector reports are reviews of principles and processes that underlie the basic concepts of a Conservation Strategy. These will be represented by our reports *Reserves for Nature*, and *Resolving Conflict: A Case Study*.

An important assumption of the Conservation Strategy is that, given the will, the care, and the concern, economic development can be integrated with protection of the environment. It was to explore practical, successful application of that principle that the case of Hewitt Oil was examined in *Resolving Conflict: A Case Study*. In this instance a sour gas processing plant was to be established in a country residential area just west of Edmonton. After some initial missteps and miscues, an outcome was achieved that satisfied the residents, was attractive to the developer, and ensured that sour gas supplies would be fully utilized. This kind of problem will be replicated in many of Alberta's sour gas fields, including areas around Edmonton, Calgary, and in the Sundre/Caroline area. Development can be handled in the normal confrontational manner, with gas development companies pitted against residents, with an accompanying unnecessary deterioration of Alberta's natural and social environment. However, the Hewitt Oil case study shows that it is possible to have development that is satisfactory to developer and resident alike. As the report points out, both sides have to give up cherished positions, but more important, governments have to adopt, as an objective, the role of facilitator of reconciliation, rather than the preservation of the bureaucratic privilege as arbiter between parties in conflict. The change of mind set from a quasi-legal adjudication approach to a facilitator of amicable, mutually agreeable settlements is daunting, but it is the only path that gives hope for a future where environmental conflicts will decline, rather than increase.

It was especially heartening to the ECA to receive an endorsement from the National Task Force on Environment and Economy of many of the approaches that the Council has long advocated. These approaches include the Task Force's recommendations for the development of provincial conservation strategies, their advocacy of multipartite processes (government, industry, and non-government organizations) in dealing with environmental issues, and their recommendation that "all levels and departments of government establish consultation processes which encourage and facilitate public involvement and influence in policy making and planning processes."

In addition there are throughout the National Task Force Report numerous recognitions and endorsement of positions and approaches that the Environment Council has advocated for years. From a position of lonely pioneer, the ECA approach has been incorporated into the mainstream of Canadian thinking about environmental matters. The Task Force report represented the consensus of seven environment ministers, including the Federal Environment Minister and our own Alberta Environment Minister, the Hon. Ken Kowalski, but it also obtained support from the chief executive officers of some of the largest Canadian industries (and some of its greatest polluters) such as Dow Chemical Canada Incorporated, Inco Limited, Noranda Forest Incorporated, and Alcan Aluminium.

The ECA and its Public Advisory Committees have been struggling, since 1985, to develop a provincial conservation strategy, making mistakes and learning from them, trying first one approach, then another, until we believe we have found one that we are comfortable with and seems to fit the Alberta situation. The development of the Conservation Strategy for Alberta has been carried to this point with little help, and some hindrance, from the various departments and agencies of government. Suddenly there is a consensus by major national representatives of government and industry at the highest level, including unanimous endorsement by the First Ministers of the nation, that "every province and territory should have a Conservation Strategy in place by 1992."

It is the Council's objective that the Alberta Conservation Strategy be in place by 1990, to be available for review at a major National Conference on Sustainable Development, as recommended by the National Task Force.

It is not often that a small government agency like the ECA receives such a national endorsement of its approach and objectives as has occurred through the National Task Force report. That sure-

ly is a major triumph of 1987. It is a triumph not only for the Council but for the continual leadership of Alberta in the environmental field.

Another triumph was the reception accorded the Report and Recommendations on Recycling on its release on May 5, 1987. The Minister of Environment, the Hon. Ken Kowalski, not only praised the report highly for its originality and innovation, but he also congratulated the Panel on the practicality of its recommendations. He stated that the recommendations were of a nature that, over time, they could all be adopted and that they could form the basis for a new emphasis on recycling as a major component of waste management in Alberta.

December, 1987 marked my tenth full year as the Chief Executive Officer of the Council. I have served as the Vice-Chairman of Panels for public hearings on a wide variety of important environmental topics. These reports and their recommendations have met with a mixed fate. In some instances the reports have been met with enthusiasm and their recommendations adopted virtually in their entirety. In other instances the most important recommendations were either ignored or the least favored and least desirable alternatives adopted as government policy. In other instances, such as Noise or the Security of the Agricultural Land Base, the advice was simply ignored, because the proximate cause of the concern, the rapid rate of economic growth, had subsided and the problem was no longer considered sufficiently compelling to be worth the effort to solve.

In every instance the quality of the report, the accuracy of the facts, the validity of the analysis, and the absence of bias, has never been challenged or disputed by any elected official or civil servant. This is an enviable record for an independent advice-giving agency. The Council has tried to provide independent, unbiased, innovative advice, based on what it has heard from Albertans with widely varying viewpoints and from each Panel's own study and analysis. Because the Council's reports do not try to protect existing ways of dealing with problems and suggest alternatives that the Council believes more effective, efficient, and economical, they inevitably step on someone's toes or demolish someone's favorite project or program.

The first reaction of those so offended would be an attempt to try to challenge the factual basis for an ECA report or an attempt to show that the analysis is erroneous or fatally flawed. Such action has no doubt been attempted but, to my knowledge, on other than minor technicalities, has never succeeded.

In every instance where the government adopted the recommendations of Council, the results have been either successful, or major improvements have resulted. However, in those instances where the recommendations were ignored or the contrary direction adopted, the results have turned out to be unsatisfactory, uneconomic, or environmentally harmful.

With a track record of independence, innovation, national and international leadership, credibility with the public and a lack of bias, there should be a lineup of potential environmental problems and opportunities awaiting the application of the Council's public hearing process.

That is the greatest disappointment of 1987. At the end of the year, no public hearing had been assigned to the Council by the Cabinet. This was not due to any shortage of important environmental problems in Alberta. The Council has recommended to the Minister of Environment that a number of environmental problems either currently exist or can be anticipated in the near future. Some of these potential topics include the fate of wetlands, groundwater management, public access to private and Crown Lands, outdoor recreation in all its aspects, and the Alberta Conservation Strategy. At the end of 1987 no firm decision had been reached on whether the Council would be directed to hold hearings on any of these topics.

In 1977, when the Environment Council Act replaced the Environment Conservation Act, I noted at that time and since, that the only substantive change of consequence was the removal from the Council of the ability to undertake public hearings on its own authority. I also noted that the Conservation Authority had never undertaken a

public hearing without the approval of the Minister and Cabinet and that I was confident that the utility and ability of the Council would guarantee that it would be assigned important environmental topics for investigation. And so it was for the first nine years of the Council's existence. However, in 1987 the effect of the change in the Council's mandate finally became apparent. We did not run out of important, challenging environmental problems or opportunities in Alberta, we ran out of the political will to have them examined by a body that would deal with them fairly, freely, independently and in consultation with everyone in Alberta who felt that they could contribute to its solution. That is the great disappointment of 1987.

It is the best of times and the worst of times. In 1987 the Council received national accolades for its work and fulsome praise from the Minister of Environment for its Recycling Report. At the same time it was prevented from carrying out its mandate in the way that it should. To operate effectively, the Council requires the advance indication of major topics that it will be called upon to investigate. In the absence of the assignment of such tasks, the Council can only be partially effective and a proven instrument for developing new and better ways of dealing with environmental problems is blunted and underutilized.

Alistair D. Crerar
December 1987

2. POLICY AND PROGRAM REVIEW

2.1 MINISTERIAL REPORTS

2.1.1 DRAFT ENVIRONMENTAL PROTECTION ACT REVIEW

In 1987 the Environment Council responded to a request from the Minister of Environment to review the draft Environmental Protection Act (Canada). That request was received on February 17, 1987, and responded to on March 20, 1987. The report follows:

SUMMARY OF THE REVIEW OF THE DRAFT ENVIRONMENTAL PROTECTION ACT

The draft Environmental Protection Act represents a substantial improvement in Environment Canada's ability to deal with toxic substances. However, it tends to disappoint because it does not live up to the rhetoric that accompanied its introduction. For example, it was stated that "the Government of Canada, on behalf of all Canadians, intends to act harshly against polluters" and indeed harsh fines and jail terms are provided for those convicted. At the same time, the "due diligence" or "I thought it was working" defense provides an easy escape from prosecution and a difficult case for the Crown to prove.

It is stated that "the proposed Environmental Protection Act will establish a framework for action and co-exist with provincial environmental legislation." However, though the Act seems to recognize that the federal government can be most effective in the early stages of the cradle-to-grave cycle, the Act tries to provide a regulatory regime throughout the whole of the cycle that is clumsy, duplicative, inefficient, ineffective, and constitutionally suspect.

These shortcomings are unfortunate since the Act will do useful things, but if the Act is promulgated as it stands, inflated expectations will lead to a loss of credibility. It would have been much more effective if Environment Canada had leveled with Canadians and said "We would like to have federal legislation to protect the environment, but we don't have constitutional authority to do that. Therefore we cannot offer you an 'Environmental Bill of Rights' or full protection of all aspects of environmental quality. But here is what we can do to protect the environment through an extension of our constitutional responsibility for the life and health of Canadians by the better management of toxic substances."

Since the federal government seems unwilling to admit that it can't protect the environment (unless environmental deterioration represents a danger to human life or health), many people will conclude that it really doesn't wish to.

This review of the draft Environmental Protection Act is based on the premise that:

(a) environment protection is important

(b) it can be best achieved by the provinces and the federal government each doing what they are best able to do

(c) that the federal competence is greatest at the beginning of the life cycle of substances, in the establishment of minimum national standards, the collection and collation of information, and the control of import and export of substances

(d) the provincial government's greatest strength is in regulating and controlling specific sources of substances and their ultimate disposal. It would be desirable for the Environmental Protection Act to acknowledge this and develop a clearer framework for the sharing of responsibility for the protection of the environment.

There are a number of recommendations in the report intended to achieve more effectively the stated intention of the Act. The major recommendations are summarized below:

PUBLIC CONSULTATION

1. In order to ensure that other governments and the public are involved in the development of environmental quality objectives, guidelines, and codes of practice, an addition is recommended to Section 4 of the Act:

   (3) In the development of environmental quality objectives, guidelines, and codes of practice, the Minister will act in cooperation with provincial and territorial governments and in consultation with the people of Canada.

REVERSE ONUS

2. There should be a period of grace of, say, one year, when any person who manufactures, processes, imports, or uses a substance commercially would be able to have a substance included under Schedule I by signing a declaration that it is not toxic. Substances not so designated would thereafter be subject to testing protocols and other procedures for new substances.

   To support this approach, the exemption from "due diligence" defense provided in Sections 53 and 54 should be extended to Section 52.

DEFINITIONS

3. A toxic substance should be defined as "one that may, at any time, endanger human health or the environment on which human life depends."

4. Health (not defined)

   The World Health Organization definition of health should be used: "A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."

5. Environment (not defined)

   It should read:

   environment includes conservation, management, and utilization of natural resources; the prevention and control of pollution; the prevention and control of noise; and economic factors that affect the ability of a person to carry out measures related to the above; as well as any operation or activity that adversely affects the quantity, use, or preservation of natural resources. (Alberta Department of the Environment Act)

SUBSTANCES

6. The definition of a substance in Section 2 should include, rather than exclude, mixtures. It is suggested to transfer the concept from the Clean Air Act: "contaminants in combination with any one or more other air contaminants."

7. Delete Section 15(2)(e)

   "Substances produced when a substance undergoes a chemical reaction as a result of

storage, environmental factors or the use to which the substance is put" are exempted from reporting requirements for substances new to Canada, yet many dangerous substances form under the circumstances described in the Subsection.

RELEASES

8. There should be a general prohibition against the release of toxic substances to water.

9. Environment Canada staff should have powers similar to Alberta's Director of Pollution Control.

10. Section 22 of the Act should require reporting releases within 24 hours of the discovery of the release, with a written report to be filed within 72 hours.

11. The preferred solution would be the delegation of responsibility to act on releases to the province, where the province is competent. Alberta is believed capable of accepting this responsibility.

INFORMATION

12. There should be a provision requiring the Minister of Environment to file an annual report on the Act, reporting on the progress in implementing the objectives outlined in the third "Whereas" of the Preamble.

13. Material collected under Sections 7, 8, and 9 or Subsections 11(a) and 15(1) should be summarized and published with the Annual Report.

14. Detailed information collected under the Sections above should be held in a manner where it is accessible to the public, subject to a fee related to the cost of publishing the material.

REPEAL OF THE CLEAN AIR ACT

15. Though it has been stated that none of the effective environmental protection provisions of the Clean Air Act will be lost, there is no clear provision for their retention in the draft Act. A major problem seems to be that the definition of toxic, as presently contained in the draft Act, is much more restrictive than the definition of "air pollution."

16. The concepts of tolerable, acceptable, and desirable levels of concentration are not adequately replaced by minimum, average, or maximum quantity or concentration of a substance. Indeed, to establish a minimum concentration seems to reject the long-term ideal of zero discharge to the environment. The concept of tolerable, acceptable, and desirable levels of concentration should be inserted in Section 40 of the draft Act.

PROVISION FOR ALLOWABLE VARIANCE

17. There should be provision, in the Act, for the concept of allowable variance where, within certain prescribed limits, only administrative action is undertaken while, beyond the allowable variance, absolute liability would prevail.

PROVISIONS TO INCREASE ADMINISTRATIVE EFFICIENCY

18. The draft Act should be changed to delegate greater responsibility to departmental staff and make actions mandatory rather than discretionary, with penalties for failure to act.

19. The federal Environment Minister should be assigned greater responsibility for management of the Environmental Protection Act and environmental matters generally. The many instances where joint action with the Minister of Health and Welfare are required

are unnecessary, time consuming, and indicate a lack of trust in the competence of the Environment Minister.

20. Addition of "Environment Watch" provisions would be desirable where the general public could provide information on suspected violations of the Act to appropriate authorities.

21. Reference to "due diligence" defense in Sections 60 and 23(3) should be removed from the Act. Due diligence is available as a defense in any event and there is no need to codify it in legislation.

Fuller explanations and rationale for these recommendations can be found in the main report.

MAIN REPORT — REVIEW OF THE DRAFT ENVIRONMENTAL PROTECTION ACT

The draft Environmental Protection Act was released jointly by the Ministers of Environment and Health and Welfare Canada on December 18, 1986. According to the accompanying statements by the Minister of Environment, the Act is strong environmental legislation that will give the federal government broad new powers to manage toxic substances and minimize further contamination of the environment.

The Minister's statements describe the stronger powers: a life cycle approach to the management of chemicals, tougher penalties, and a commitment to set national standards that will provide an integrated, co-operative and, above all, preventative approach to the problem of toxic chemical pollution in Canada. The Minister has said that these new powers will assure all Canadians of the fundamental right to a safe, healthy environment[1].

The Environmental Protection Act is proposed as a solution to several major problems. These problems relate to the complexity of the existing regulatory regime, the need for information to assess the toxicity of substances, and the assumption that substances are harmless to human health and the environment until proven otherwise.

The complexity of the existing regulatory regime

— Responsibility for environmental protection is split between the provincial and federal governments.
— At the federal level, 24 departments administer a total of 58 Acts dealing with the control of hazardous substances.
— Different stages of a substance's life cycle are addressed by different agencies in isolation.
— The regulatory regime contains duplication and areas of overlapping jurisdiction.

The government's need for adequate, timely information relating to the toxicity of substances

— There is no systematic procedure to screen substances for toxic effects before they are introduced for use in Canada.
— The Minister's present information-gathering powers are confined to commercial operations; institutional, scientific, and other activities that may be sources of toxic substances are exempt.
— About 58,000 chemicals are being used in Canada, of which about 1,250 are manufactured by some 250 domestic

1 *The Right to a Healthy Environment: An Overview of the Proposed Environmental Protection Act.* Statement by the Hon. Tom McMillan, Minister of the Environment. Canada Department of the Environment.

producers. It is estimated that approximately 1,000 new chemicals are added each year.

The assumption that substances are harmless until proven otherwise

— The responsibility should be primarily on industry to demonstrate that any new substance is safe, not on the government to prove that it is dangerous.

1. FEDERAL AND PROVINCIAL ROLES IN ENVIRONMENTAL PROTECTION

Successive federal governments have been fully aware that the public expects them to be able to preserve and enhance environmental quality and to take strong action to force laggard provincial governments to enforce tough environmental legislation. While the public has been pressing for higher standards and stricter enforcement, the federal government's perception of limited constitutional authority to protect the environment may not have allowed a vigorous response to these demands.

The strongest constitutional basis for federal involvement in protection of the environment is its responsibility for fisheries. This responsibility is clearly defined and long-standing federal laws prohibit the deposit of deleterious substances in waters frequented by fish. By definition, fish include shellfish, crustaceans, and marine mammals. Since most water, fresh or salt, is frequented by some species of "fish," and one of the standard tests of water quality is its ability to support a fish population, there is a clear, unambiguous federal responsibility for the quality of Canada's waters.

The Environmental Contaminants Act is based on the federal responsibility for the health of the people of Canada. There seems to have been some reluctance to apply this Act vigorously, with the result that only five particularly noxious substances have been scheduled under the Act since it was proclaimed in 1976.

There is clear federal responsibility to protect the environment of federal lands, waters, and works and to control the environmental impact of federal undertakings. This responsibility covers substantial portions of the nation, including territorial lands.

There is also clear federal responsibility for matters of national and international trade and commerce, related to the likelihood of certain substances becoming important to the economy of Canada and of the substances entering international trade and commerce. Matters of national and international trade and commerce provide the basis for controlling substances dangerous to human life or health in all phases of their life cycles.

An alternate constitutional basis for federal environmental responsibility arose through the identification, by the Law Reform Commission, that there could be crimes against the environment and that these would be a federal responsibility under the Criminal Code.

The authority for protection of the air and land environments in general is less clear. The federal Clean Air Act gives the Governor in Council authority to prescribe air emission regulations where the operation of stationary sources of air contaminants may constitute a significant danger to the health of persons or may result in the violation of any international obligations relating to air pollution. This provision is related to the federal government's responsibility for the health and safety of all Canadians and its treaty-making powers.

These constitutional responsibilities are the foundation for the Environmental Protection Act and represent the possibility for a substantial increase in the federal authority to regulate toxic chemicals. The authority, nevertheless, remains primarily based on the federal government's responsibility for the life and health of the people of Canada and consequently for protection of the environment, to the extent that there is a connection between environmental quality and the life and health of Canadians.

The suggestions by the environmentally concerned that the federal government should provide greater protection to environmental quality for its own sake are understandable. However, legislation identifying a federal responsibility for the protection of the environment per se (except for water inhabited by fish) would likely be declared *ultra vires* if challenged in the courts. The federal government is constitutionally responsible for the life and health of the people of Canada, but not the life and health of the environment. The many references in the Preamble, and throughout the draft Act, to "the environment on which human life depends" are an attempt to establish an essential linkage that provides the legal and constitutional basis for federal action in this area.

It is because of these legal and constitutional constraints that the thrust of the Environmental Protection Act is toward the management of toxic substances, where the linkage between human health and environmental quality is clearest. The greatest extension of federal powers in the draft Act is in relation to the early stages of the life cycle of substances, when the collection of information, support for research and development, and development of guidelines and standards are all clearly essential to identify whether, and under what conditions, the state of the environment relates to life and health.

The Environmental Protection Act will replace the Environmental Contaminants Act, but includes many of its features and attempts to improve on that Act. Concern about the ability of the federal government to adequately manage toxic substances is the primary reason that the Environmental Protection Act was drafted. This concentration on toxic substances represents something of a central Canadian bias. The release of toxic substances to the environment is probably the priority environmental problem in Ontario and Quebec. It is certainly important in the West, but problems of environmental conservation and resource management would rank equally high and the draft Act does not address these concerns at all.

In February 1985, the Ministers of Environment Canada and Health and Welfare Canada released for comment proposals for amendments to the Environmental Contaminants Act. A consultative committee with representatives from business, labor, public interest groups, and the federal and provincial governments was formed. Between September 1985 and August 1986, this committee met several times and then submitted a report to the Ministers outlining its proposals for amendments to the Environmental Contaminants Act.[1]

At the same time, another consultative committee was formed to provide "a framework for the management of chemicals in Canada." Its report, *From Cradle to Grave: A Management Approach to Chemicals*, was also released in October 1986.[2]

This latter report introduced the idea of a seven-stage life cycle for chemical substances. In considering the progression of a substance through the seven stages, there is a progression from predominantly federal to predominantly provincial responsibility, with a transition through areas of shared or joint responsibility.

Stage in Life Cycle	Principal Responsibility
Research and Development	Federal
Introduction	Federal
Manufacturing	Shared
Transportation	Shared
Distribution	Shared
Use	Provincial
Disposal	Provincial

1 *Final Report of the Environmental Contaminants Act Amendments Consultative Committee*. October 1986. Published by the authority of the Minister of the Environment and the Minister of National Health and Welfare.

2 *From Cradle to Grave: A Management Approach to Chemicals*. September 1986. Report of a task force representing industry, governments, labor, environmental groups, and consumers. Canada Department of the Environment.

The progression in responsibility relates to the transition from a mobile, easily communicated concept during research and development to a specific use in a specific jurisdiction toward the end of the life cycle. However, although use and disposal are best managed at the provincial level, and research and development most appropriately managed at the federal level, there is still need for close consultation between governments in these stages.

It is most appropriate for the federal government to collect and analyze information on the potential environmental and health dangers related to the dispersal of substances into the environment. The federal government has the ability to control the introduction of substances into Canada as well as the export of substances from Canada. The federal government also has responsibility for assuring compliance with international treaties, for protecting federal lands and works, and for regulating interprovincial or international transportation of substances. Furthermore, the federal government has the authority to obtain information on the manufacture, processing, use, and importation of substances, and the competence to collect and analyze information at a national level. Environment Canada and Health and Welfare Canada are the authorities for these areas of the Environmental Protection Act. However, consultation with the provinces is still required in these areas, particularly in establishing priorities for assessing the toxicity of substances and during the development of standards and protocols.

During the stages of use and disposal, and for releases that may occur at any stage, the province is best qualified to manage substances. This is because local requirements and concerns become paramount and the best decisions take local conditions and attitudes into account. It is also the local level that is likely to bear the immediate consequences of environmental problems and the costs of remedial measures. However, even in these situations, there is a federal obligation to ensure that individual provinces meet minimum national standards. If this cannot be achieved, direct federal action becomes appropriate.

During the middle stages of the life cycle — manufacturing, transportation, and distribution — the responsibilities are clearly shared. In certain areas, such as transportation, packaging, and storage, very substantial joint control over dangerous substances already exists through the Transportation of Dangerous Goods Act and its provincial counterparts, while in the areas of manufacturing and distribution, there is little federal involvement. Air emissions guidelines and standards have been promulgated, for example, for only six industries. Very substantial discussion between the provinces and the federal government will be required to establish the nature, level, and responsibility for the control agreements appropriate for these stages.

2. THE ENVIRONMENTAL PROTECTION ACT — WHAT IT DOES AND DOES NOT DO

The various parts of the Act are primarily modifications of existing legislation that will be repealed. Part I replaces the Environmental Contaminants Act, Part II replaces Part III of the Canada Water Act, Part III results from a deletion from the Department of the Environment Act, and Part IV results in a repealing of the Clean Air Act.

PREAMBLE

The Preamble is not legally binding, but provides an indication of the government's intentions in implementing the Act and a guide to those who administer or enforce the Act as well as those affected by its provisions. The Preamble identifies that protection of the life and health of the people of Canada and the environment on which human life depends are matters essential to the present and future well-being of Canadians.

The Preamble also indicates some of the constitutional authority and constraints, stating that the Act relates to health impacts of substances, matters related to international trade and commerce, and international implications of substances in the environment. The Preamble also recognizes the need for the federal government to

act in co-operation with provincial and territorial governments and in consultation with the people of Canada in fulfilling its role.

The thrust of the legislation is thus clearly toward the protection of human life and health and the environment upon which human life depends; however, there is no definition of "health," "environment," or "the environment on which human life depends."

The Preamble and much of the supporting departmental commentary have been overly positive in identifying the potential benefits of this Act and ignore scientific uncertainties of assessment of impacts of substances in the environment. There is little recognition in the Preamble that environmental systems and human needs change over time and that decisions about the environment today may well be poor decisions when viewed in hindsight. This anthropocentric approach to environmental protection carries with it substantial risk.

Protection of the environment solely to protect human health and safety may have serious environmental consequences. The relationship between the environment and human health is complex and complicated and linkages are often difficult to prove. It would be hard to identify a linkage between wetland drainage and human health, except by establishing that bird watching or duck hunting are essential aspects of the psychic well-being of many Canadians.

Under the all-encompassing title "Environmental Protection Act," one might expect to find various aspects of a broad view of environmental protection, such as mechanisms for protection of soils, ambient water quality, and drinking water quality, preservation of genetic diversity, protection and restoration of ecosystems, and a philosophy of sustainable development of renewable resources. None of these features is present. National involvement in these broader aspects of the maintenance of ecological systems is essential to ensure consistency and comparability of objectives and because of the potential regional, national, and international consequences of local activities.

The Environmental Protection Act, moreover, is not comprehensive legislation even with respect to toxic substances. The Act is designed primarily to regulate new, potentially dangerous substances that are not regulated by other legislation. Examples of substances regulated by other legislation include pesticides and antibiotics. These substances, however, are controlled only in part by other legislation. For example, the primary concern of Agriculture Canada in regulating the use of pesticides is their efficacy, effects on non-target species, and restrictions on their application. Long-term or widespread environmental impacts are not a major concern. It is in the interest of the environment to consider the ultimate fate of these and other substances. The Environmental Protection Act has the potential to control all stages in the use of substances, but the intent of the Act will need to be more broadly interpreted and interdepartmental working agreements will be required to delineate responsibilities throughout the life cycle of substances from research to disposal.

The intent of the Environmental Protection Act with respect to environmental protection is, in fact, more restricted than much of Alberta's environmental legislation. The responsibility for protection of the environment for its own sake is a provincial responsibility and is not challenged by the Environmental Protection Act. It is at the provincial level that problems of environmental protection will surface, where enforcement will usually occur, and where public-industry-government confrontations are likely to be the most severe.

If the province is to bear the consequences of an Act that promises more by implication than it can actually deliver, it must ensure that it is a full partner in decisions that affect provincial interests. There is explicit recognition in the Preamble that the federal government, in implementing the Act, will act in co-operation with provincial and territorial governments and in consultation with the people of Canada. This indicates that the federal government is not only aware of its constitutional constraints, but also of the legitimate role that the

public has to play in providing governments with guidance concerning the value judgements inherent in environmental protection.

SECTION 4

Section 4 of the Environmental Protection Act provides the Minister of Environment with the opportunity to formulate environmental quality objectives, guidelines, and codes of practice. Present objectives and guidelines under the Environmental Contaminants Act, the Clean Air Act, and Part III of the Canada Water Act would need to be transferred to the Environmental Protection Act in order to retain their status. Examples under the Clean Air Act are the Ambient Air Quality Objectives and Emission Guidelines for the following industries: cement, asphalt paving, packaged incinerators, metallurgical coke, arctic mining, and wood pulping.

Provinces and people must be involved in the process of establishing objectives, guidelines, and codes. These are not purely technical or scientific matters. Most of the data will be based on work carried out in a laboratory under controlled conditions. The introduction of substances into the environment usually takes place on a much larger scale, under widely different biogeographical conditions. In view of the paucity of conclusive research about the environmental effects of many substances now in use, a considerable amount of judgement is needed to assess the risks and to develop the most appropriate objectives and guidelines.

Public input, when added to the technical and scientific base, enables decision makers to make more informed judgements about goals and objectives for environmental protection. Involving the public not only assists decision makers but also facilitates public acceptance of the objectives and guidelines as being well founded and suitable to achieve the level of protection desired. These aspects — co-operation and consultation — should be more clearly defined in the Act, especially with respect to the development of criteria for the determination of toxicity, national standards for toxic substances, and national objectives, guidelines, and codes of practice. If the opportunities that arise from Section 4 are fully utilized, then the Environmental Protection Act will be able to make a significant contribution to protecting Canada's environment. It would be desirable to add a Subsection to Section 4 stating:

> (3) In the development of environmental quality objectives, guidelines, and codes of practice, the Minister will act in co-operation with provincial and territorial governments and in consultation with the people of Canada.

Part I Toxic Substances

This part contains provisions for collecting information on substances from anyone involved in the processing, manufacture, use, or import of substances, for the establishment of Schedules of substances, and for regulating toxic substances. Much of its implementation depends on involvement of both the Minister of Environment Canada and the Minister of Health and Welfare Canada.

Part I is based primarily on the Environmental Contaminants Act and includes many of the changes suggested by the multi-stakeholder consultation committee as outlined in the *Final Report of the Environmental Contaminants Act Amendments Consultative Committee.*[1]

Part I contains several information-gathering provisions that are essential to the development of a data base on substances, both existing and new.

The Minister of Environment may "...require any information and samples as will permit an assessment to be made of the danger to human life or health or the environment..." (Sec. 7(2)). Where

1 *Final Report of the Environmental Contaminants Act Amendments Consultative Committee.* October 1986. Published by the authority of the Minister of the Environment and Minister of National Health and Welfare.

both Ministers have reason to suspect that a substance is toxic, they may require a person manufacturing or importing the substance to conduct such tests as they may reasonably require to ascertain whether or not the substance is toxic (Sec. 9(1)(c)).

Section 8 requires every person who has information that may be used to ascertain the toxicity of a substance imported, manufactured, or processed by him or used in any such activity or in any commercial activity, to submit this information to the Minister of Environment. As well, data may be collected and investigations conducted by either Minister where they suspect that a substance may be toxic (Sec. 11).

Schedules, however, are the basis for implementing the Act. Section 14 authorizes development of three Schedules of substances. Schedule I will provide a listing of non-toxic substances in use in Canada and Schedule II a listing of substances in use elsewhere in the world, but not yet in use in Canada. After the Schedules have been developed, Section 15, which requires reporting to the Minister of Environment, prior to manufacture or import of any new substance, "such information as may be prescribed," will provide the basis for the collection of information on new substances, except those listed in Schedule I. Section 17 contains the authority to make various regulations respecting the information that must be submitted to the Minister of Environment with respect to substances new to Canada.

Schedule III will list substances that have restricted uses in Canada or are banned. Before these substances could be exported, the receiving country would have to be notified and permission obtained. This provision recognizes the federal government's responsibility in the global environment.

Section 18 contains the provision for listing and amending Schedule IV, the toxic substances. These substances could be subject to a broad range of regulations affecting: advertising, storing, packaging, disposal, partial or total bans, and import or export in accordance with Section 19. The five substances that have been Scheduled under the Environmental Contaminants Act since its proclamation in 1976 would be added to this Schedule.

The information collection authority of the federal government under these provisions is substantial and significantly expanded over that in the Environmental Contaminants Act. How this authority will be used remains to be seen. The federal government has indicated that it is through these provisions that it will shift the onus of proof of the safety of substances from the government to industry. The present wording of the draft Act does not seem to accomplish this goal. The Act requires the filing of information on new substances and this may shift much of the actual testing from government to industry, depending on the testing protocols. Nevertheless, it is still up to government to analyze the information submitted, decide on its adequacy, collect data on suspected toxics, determine the scheduling of substances, and promulgate the necessary regulations.

If the onus to prove safety in the use and dispersal of substances is to truly shift to those who use, manufacture, import, or process the substances, then a different approach is needed in the compilation of the Schedules. This could be done by giving every person who presently uses, processes, imports, or manufactures substances in Canada a period of grace, perhaps one year from the time of proclamation of the Act, to sign a declaration that the substance he is using or producing is not toxic and thus eligible for inclusion in Schedule I. This may be supported by submitted data, but need not be. However, if the substance were later found to be toxic, the producer or importer would be held responsible for all public and private remedial costs.

After the grace period, test data, as specified by the Minister of Environment, would be required for all substances, as well as a signed declaration by the producer as to the safety of the substance. Such provisions are within the authority of the federal government; for example, everyone is required to sign a declaration on income tax forms that the information submitted is accurate and

complete. Such provisions in the Environmental Protection Act would truly shift the onus of proof onto the producers and users of substances.

With this approach a list of non-toxic substances would develop quickly, as manufacturers voluntarily came forward for Schedule I listing during the grace period. The more toxic substances would tend to lag behind. Some may not even come forward voluntarily. However, giving false or misleading information in purported compliance with Section 8 is an offense and one for which the "due diligence" defense is explicitly removed. The penalties provided seem sufficiently severe to discourage anyone from identifying a toxic substance as eligible for Schedule I classification. Withholding information related to Section 8 is an offense under Section 52; however, the "due diligence" defense exemption should also be extended explicitly to offenses under Section 52.

Despite these efforts to reverse the onus, the federal and provincial governments will still have the responsibility of assessing the information that has been filed for the purpose of developing the list of toxic substances to be regulated, identifying substances that the Ministers suspect are toxic, and ensuring that information is filed or developed on those substances.

Properly administered, the Environmental Protection Act could provide a much improved data base to assist the province in its activities with respect to environmental protection, developing ambient and emission standards, licensing of facilities, and waste management practices. The province has a good opportunity to have its concerns reflected in information collection and environmental monitoring, and should be aggressive in suggesting a mechanism for assessing candidate substances and should make every effort to assist with the preparation of a list of existing chemicals that it considers potentially toxic and which need full evaluation. The recent controversy over a proposed PCP plant in Alberta provides a useful example where the province appeared to be lacking some of the data necessary to make a decision; an easily accessible federal government data bank containing environmental testing information on the manufacture of PCPs would have been useful to the Province and residents of the project area. The Province and public should participate in development of guidelines for information requirements in order that the information submitted is most useful to them.

An important aspect of Part I is the definition of toxic in Section 5, because most of the regulatory authority in Part I relates to the control of toxic substances. If the Act does incorporate cradle-to-grave management of substances, it is evident only with respect to the regulatory powers concerning toxic substances listed in Schedule IV. As discussed earlier, the federal government has been very careful to confine the Act to the control of substances that pose a significant danger to human health or life. However, the convoluted and overly complicated definition of toxicity is likely to prove unworkable.

Much of the implementation of the Act will depend on subsequent interpretation of the definition. Lines 15 to 30 on page 2 of the Preamble attempt to clarify the scope of the Act, but succeed in only further muddying the waters. These lines refer to immediate or long-term danger, damage to biological organisms or the natural ecological equilibrium, and deleterious and largely irreversible effects on the natural environment. A clear, simple definition, which will ultimately be refined and interpreted by the courts, would make the Act much more useful. The explanatory notes for the draft Act contain such a definition. A toxic substance is defined as "one that may at any time, in Canada, or in any part of Canada, endanger human health or the environment on which human life depends." If this simple, clear, and concise definition is not adopted, the existing definition could be improved by changing Section 5(a) to read "may enter the environment" rather than "will." The present definition requires a level of forecasting accuracy that is difficult to achieve.

Definition of the words "health" and "environment" are also needed. The World Health Organization's definition of health should be considered: health is "a state of complete physical,

mental and social well-being and not merely the absence of disease or infirmity." A useful definition of matters pertaining to the "environment" can be found in Alberta's Department of the Environment Act and includes: conservation, management, and utilization of natural resources; the prevention and control of pollution; the prevention and control of noise; and economic factors that affect the ability of a person to carry out matters related to the above, as well as any operation or activity that adversely affects the quantity, use, or preservation of natural resources.

Other definitions need clarification. A specific example in Section 2 is the definition of substance. The definition is workable, but specifically excludes mixtures of substances from sections of the Act covering the mandatory reporting of the import or manufacture of new substances. Mixtures often have very different effects than substances acting in isolation. This definition ignores the possibility of synergistic or antagonistic effects. Section 4 of the Canada Clean Air Act recognizes the importance of mixtures in relation to the development of ambient air quality objectives when it refers to "contaminants in combination with any one or more other air contaminants." This concept from the Clean Air Act should be transferred to the Environmental Protection Act.

Section 15(2)(e) exempts "substances produced when a substance undergoes a chemical reaction as a result of storage, environmental factors or the use to which the substance is put" from the reporting requirements for substances new to Canada. For many substances, the environmental and health implications are greatest for the breakdown products due to exposure to the elements, or following landfilling or incineration. This subsection seems to exempt many of the situations that most concern environmental managers and should be deleted.

Section 22 of the Act requires reporting of releases of toxic substances and requires emergency measures to be taken by the persons in charge of the substance. If the toxic substance is not yet scheduled, then Cabinet may direct that emergency measures be taken. There is no authority for the Minister or his staff to act directly in the matter by ordering control of the release, nor is there a specific general prohibition on the release of toxic substances.

Alberta's Clean Water Act provides a good example of the kinds of authority that are required in dealing with toxic substances. The Clean Water Act contains a general prohibition against the release of water contaminants that may degrade or alter water quality so as to render the water harmful to human health or life, fish, wildlife, livestock, or plants. In addition, the Director of Pollution Control may issue Control Orders related to controlling the release of detrimental substances. Noncompliance with Control Orders is directly enforceable. The federal government does not have the constitutional authority to prohibit contaminants that would render water harmful to all wildlife or plants. However, water that would be safe for fish should be suitable for other uses and there is clear federal authority to protect fish. Emergency responses would be expedited if Environment Canada staff people were provided powers similar to the provincial Director of Pollution Control. In the case of the release of Schedule IV substances, the Environment Canada staff person should have the authority to identify the emergency measures to be taken by the persons in charge of the substances as well as the ability to direct others to undertake actions to cope with the emergency. In the case of toxic substances not yet scheduled, it should be possible for the action to be initiated by a designated staff person subject to later review by the Minister, rather than requiring a directive from Cabinet to undertake action.

Section 22 also should contain specific requirements, like those found in regulations under Alberta's Clean Air and Water Acts, for reporting releases within 24 hours of discovery of the release and filing a written report within 72 hours. These provisions would be more enforceable than the present vague requirement of reporting "as soon as possible in the circumstances."

The best solution of all would be to delegate responsibility to act in these situations to com-

petent provincial authorities. In the major provinces, with fully competent and capable environment departments, such as Ontario, Quebec, and Alberta, the best approach would be to enter into an agreement under Section 41 of the Act that would require the province to enforce the provisions of the Environmental Protection Act as is presently done with the Fisheries Act in inland waters. The provinces noted already have the local knowledge, competence, and capability to act expeditiously in the case of environmental releases, though this is not true for all provinces.

Notable for its absence from the draft Act is any requirement for the Minister or Ministers to file an annual report. The federal government depends heavily on education, communication, and consultation as ways of carrying out its mandate. An annual report and evaluation of the implementation of the Environmental Protection Act, a published summary of filed information, and published decisions of the appeal processes would improve public awareness and should be required by the Act.

This could be achieved by a Section that reads:

> The Minister shall make a report each year to Parliament summarizing generally the activities under the Environmental Protection Act that have:
>
> (a) protected and enhanced the quality of the environment
>
> (b) provided leadership in the establishment of nationally consistent standards of environmental quality
>
> (c) given due regard, in making decisions, to environmental values
>
> (d) encouraged the participation of the people of Canada in the making of decisions that affect their environment
>
> (e) encouraged the development of a social and economic climate that accords environmental values a fundamental role in the making of decisions in the public and private sector, and
>
> (f) provided information to the people of Canada on the state of their environment.

These criteria come directly from the Preamble to the Act.

In addition, Section 10 needs to be revised by the addition of Subsections 3 and 4 reading:

> (3) Except for information exempted in Subsection (1), all information received pursuant to Section 7, 8, 9 or Subsections 11(a) and 15(1) shall be summarized and published with the Annual Report on the Environmental Protection Act.
>
> (4) Detailed information collected under Subsection 3 shall be held in such a manner that access to it by the public is possible subject to fees that relate to the cost of publishing the material.

The intention of these suggested additions is to ensure that material collected under the Act is made known and is readily obtainable by the interested public.

Part II Nutrients

This part is straightforward and has not been changed from the wording in the Canada Water Act.

Part III Departments, Agencies, Crown Corporations and Federal Works, Undertakings, Land, and Waters

This Part allows the Minister, with the approval of Cabinet, to establish guidelines related to the quality of the environment, for use by other federal departments and agencies and, with approval of Cabinet and concurrence of the appropriate Minister, to make regulations for the protection of the environment that apply to federal works and un-

dertakings. Every person who carries on a federal work or undertaking shall, at the request of the Minister, provide information that will permit the Minister to determine if the undertaking would result in a release of a substance into the environment and what measures might be required to mitigate the effects. The implementation of Part III could conceivably strengthen the application of the Environmental Assessment Review Process (EARP), since it would enable the Minister to identify undertakings that require environmental assessment, rather than relying on other departments to do so.

Part IV International Air Pollution

Inclusion of this Part in the Environmental Protection Act will result in the repeal of the Clean Air Act. The most significant effect is that the Environmental Protection Act only addresses international air pollution and then only if international obligations have been entered into by the Government of Canada. There is no statutory or implied responsibility to respond to non-contractual global issues like the "greenhouse effect," long-range transportation of air pollutants, or depletion of the ozone layer.

Many domestic air pollution considerations seem to disappear, for example:

1) the authority to carry out domestic air pollution monitoring and research (Sec. 3 of Clean Air Act), unless either Minister suspects a substance is toxic or is capable of becoming toxic

2) the authority to establish demonstration projects (Sec. 3)

3) the requirement to provide pertinent information to the public (Sec. 3)

4) the concepts of "tolerable," "acceptable," and "desirable" ranges of concentration of air contaminants (Sec. 4)

5) national Emission Guidelines for Thermal Power Plants, Packaged Incinerators, and Wood Pulp production

6) regulations relating to lead smelters, metallurgical industries, asbestos mining and milling, chlor-alkali plants, and vinyl chloride emissions

7) regulations relating to air quality objectives for sulphur dioxide, carbon monoxide, oxidants, nitrogen dioxide, and suspended particulates.

Environment Canada has stated in responses to questions raised during the public consultation process that "although the Clean Air Act will be repealed, none of its effective environmental protection provisions will be lost. They will be incorporated into the new Environmental Protection Act." The exact mechanism for doing this is not clear, but it would seem to pose some difficulties. Because Part IV seems to be limited specifically to the control of international air pollutants, authority for national air quality would presumably exist under Part I related to toxic substances. Thus, for example, retaining the existing standards for air emissions from stationary sources would seem to require Scheduling the various emissions as toxic substances.

However, the definition of toxic is much more restrictive than the definition of "air pollution," and it is questionable whether all of the existing regulations will be directly transferable. Alberta Environment should be prepared to adopt the appropriate existing federal regulations into provincial legislation in the event that they are not transferable to the Environmental Protection Act.

It may also be necessary for the province to come to an agreement with the federal government for the purpose of continuing the air monitoring program. Authority exists under the draft Environmental Protection Act to gather environmental information only when a Minister suspects that a substance is toxic or is capable of becoming toxic (Sec. 11). This restriction may limit the ability of the Minister to continue monitoring for all substances presently being monitored. As mentioned earlier, the definition of substance (Sec. 2(d)) seems to also exclude consideration of mixtures, while "air contaminant" as defined in the Clean Air

Act specifically recognizes the importance of mixtures in determining air quality. Part I of the Environmental Protection Act does not seem to be an adequate substitute for many useful provisions of the present Clean Air Act.

Similarly, the ability, in Section 40 of the Environmental Protection Act, for the Governor in Council "to prescribe the minimum, average or maximum quantity or concentration" of a substance is not an adequate substitute for the concept of maximum desirable level, maximum acceptable level, and maximum tolerable level. These descriptive phrases established a continuum along which polluters were expected to progress. The designation made the purpose of the regulation clearer to the public, the polluter, and the enforcer and provided a clearly identifiable objective for the program. Substituting maximum concentration for maximum tolerable level conveys a feeling of greater acceptability for maximum concentration than should be the case in an Act designed to enhance the quality of the environment. The concept of regulating for a minimum concentration is also difficult to grasp. It seems to suggest a requirement not to approach a zero concentration and thus reject the long-term ideal of zero discharge to the environment.

In addition to restoring the concept of tolerable, acceptable, and desirable in Section 40, the Section should also be revised to permit the Minister (not the Governor in Council) to "in the exercise of any regulation making power under this Act in respect of a substance,"

> (c) prescribe an allowable variance in the quantity or concentration thereof:
>
> i. where, within the allowable variance, the Minister will advise that an offense has occurred and will ascertain the offender's plans to prevent a repetition of the offense
>
> ii. beyond the allowable variance there is absolute liability for a breech of the regulation.

3. IMPLEMENTATION OF THE ENVIRONMENTAL PROTECTION ACT

ADMINISTRATIVE COMPLEXITY

Efficient and effective administration of legislation usually requires delegating responsibilities to Department staff and providing clear authority to the Minister responsible. Decision making becomes progressively more complex when action must be taken by more than one Minister, when two Ministers must agree, when a Minister requires Cabinet agreement, and when two Ministers and Cabinet must agree. Because of the shared responsibility of the Environment and Health and Welfare Ministers under the Environmental Protection Act, all of these situations arise. They are listed below in order of increasing complexity and probable time of response:

Delegation of Authority to Staff
Ministerial Decisions
Joint Ministerial Responsibility
Ministerial and Cabinet Agreement
Joint Ministerial and Cabinet Agreement

Delegation of Authority to Staff

While inspectors can be appointed under the Act, the authority given to these civil servants is essentially limited to intervening in emergency situations, after authority has been granted by Cabinet (Sec. 22), and to carrying out searches (Sec. 43). There is some seizure authority, limited to exigent circumstances or where a warrant has been issued (Sec. 44 and 47).

This approach contrasts sharply with the authority provided Alberta officials under legislation administered by Alberta Environment. For example, under the Clean Air Act, Clean Water Act, and Hazardous Chemicals Act, the Director of Standards and Approvals and the Director of Pollution Control have between them the authority to solicit information, issue notices to cease construction, issue and modify permits and licences, and issue control orders. Under the Environmental Protection Act, standardized routine operations

such as these require the involvement of at least one Minister, as in the solicitation of information, but may require Cabinet action if measures to control a release of a toxic substance are required. It is desirable, for efficient and effective implementation, that the Act specify the powers to be given to departmental staff and specify required action, since regulations cannot confer powers greater than those provided for in the Act.

For example, Sections 22(3) and 43(2) should state that the inspector "shall" take action, rather than "may" as the Environmental Protection Act presently is worded. Furthermore, the Fisheries Act (Sec. 63) contains a specific provision making any Fisheries Officer who violates the Act or its regulations, or who aids, abets, or connives at the violation of the Act or any regulations, liable for summary conviction. A similar section in the Environmental Protection Act would improve its implementation.

Ministerial Decisions

The Federal Minister of Environment acting on his own has only limited authority under the Environmental Protection Act. Section 4 might be considered an exception since it enables the Minister of Environment to formulate national environmental quality objectives, guidelines, and codes of practice. However, none of these would be legally binding; rather, they are educational and morally persuasive.

Sole Ministerial authority, in addition to that in Section 4, relates primarily to publishing notices to request information on possible toxic substances (Sec. 7), publishing information on toxic substance that may be exported (Sec. 25) and on proposed orders (Sec. 26), requesting information from other federal agencies (Sec. 32), recommending air emission standards when emissions in Canada are causing air pollution problems in another country (Sec. 36), appointing inspectors and analysts (Sec. 42), and seeking assistance from the courts with respect to some aspects of enforcement (Sections 48, 66, and 70). Essentially, these exclusive Ministerial powers relate to the collection and dissemination of information and some routine administrative matters.

Joint Ministerial Responsibility

The authority of the Minister to act on his own is most restricted in Part I of the Act. The Ministers of Environment and Health and Welfare must agree in order to publish notices requesting those who may be using suspected toxic substances to provide information (Sec. 9), to set up advisory committees to review data (Sec. 12), to waive information requirements (Sec. 15(4)), to assess information on new substances (Sec. 16), and to set up a Board of Review (Sec. 27).

Ministerial and Cabinet Agreement

Preventing the imminent release of toxic substances not yet included in Schedule IV requires Cabinet approval (Sec. 22). Regulations relating to the export of toxic substances (Sec. 25) or the control of nutrients (Sec. 28.1) also require Cabinet authority. Cabinet may also make regulations related to fuels (Sec. 21), prescribe national air emission standards related to international obligations (Sec. 34 and Sec. 38) and publish them (Sec. 35) and make other regulations respecting the release of a substance (Sec. 40) and court orders (Sec. 66).

Throughout the Act, regulation making requires Cabinet approval (Sec. 31, 37, and 69). This is also true if the Minister wishes to develop guidelines for federal agencies (Sec. 30), recommend emission standards relative to air pollution problems in another country (Sec. 36), or enter into agreements with one or more provincial governments with respect to administration of the Act (Sec. 41).

Joint Ministerial and Cabinet Responsibility

Concurrence of both Ministers and Cabinet is required when substances are to be scheduled under Section 14, or if regulations are required on new substances (Sec. 17), or if additions are to be made to Schedule IV (Sec. 18), or Schedule IV regulations are required (Sec. 19).

The powers granted to Alberta's Minister of Environment contrast strongly with the authority of the federal Environment Minister. There are no shared responsibilities with other Ministers under Alberta's Clean Air Act, Clean Water Act, Hazardous Chemicals Act, and Department of Environment Act. The Minister has the independent authority to make stop orders. The Minister can make some regulations, generally those relating to emissions and ambient standards. Other types of regulations must go through Cabinet. The Minister has some authority to make inter-governmental agreements under the Hazardous Chemicals Act and, under the Department of Environment Act, is responsible for continuing liaison with the federal government, provinces, territories, and municipalities. He may enter into agreements with other governments with the approval of Cabinet. Throughout Alberta's environmental legislation there are adequate procedures and authority to enable the Minister to carry out his responsibilities effectively and efficiently.

The complexity of the federal administrative system and the difference in the powers given to the federal and provincial Ministers of Environment present very real difficulties in the implementation of the Environmental Protection Act. The Alberta Minister can speak with authority on behalf of the province with respect to environmental matters. He is not required by law to obtain the agreement, concurrence, or consensus of one of his colleagues (and his staff), to matters that are, or should be, of purely environmental concern. The federal Minister of the Environment's authority is constrained both in the making of binding decisions, and in accessing the information necessary for arriving at those decisions. For example, under Sec. 9 both Ministers, Environment and Health and Welfare, must have reason to suspect the a substance is toxic before the Minister of Environment can request information on the substance from the manufacturer, importer, user, or processor. Negotiating under these circumstances is likely to be inefficient, time consuming, and frustrating to a provincial government where the Environment Minister has been assigned exclusive and sole authority to deal with environmental matters.

Of course, in many instances, the provincial Minister will desire the compliance and concurrence of his colleagues. He does so, however, based on his judgement and not on legislative requirements. At least in the case of Alberta, negotiations would take place between a federal Minister with only limited power and authority to speak on environmental matters and a provincial Minister who has virtually no restrictions, other than his own sense of what is feasible, to address environmental concerns.

ENFORCEMENT AND COMPLIANCE POLICY

The enforcement and compliance policy for the Environmental Protection Act can best be judged by how closely it approaches the rule that enforcement and compliance should be brought as close as possible to the locality where the offense occurs. There is a very good reason for this approach. Local conditions, local circumstances, and local knowledge are critical for the dispensation of justice. There are too many unique circumstances and unique information sources to make distant justice effective. Experience has taught us that those at the local level are best able to understand whether the discharge was a momentary aberration or a reckless or negligent action. For example, although it is a federal statute, the criminal code is enforced by the provinces, with a preference for the lower courts to initiate as much of the action as possible, leaving, for the higher courts, the more difficult and disputatious questions of law.

Although it is essential that there be local competence in enforcement for those aspects of the Act that will be the responsibility of the provincial government, there will be many enforcement actions that must be undertaken at the national level simply because the provinces are not the appropriate arena for action. These areas include: collecting information, adhering to required testing protocols, and controlling the import, export, manufacture, and transportation of substances.

When the offense, or potential offense, is in an early research and development stage of the life cycle, no jurisdiction other than the federal government can deal with it. When the employment of the substance has matured to the point where it is being produced, utilized, and released to the environment, it has effectively become localized in its effects and enforcement and compliance are best achieved by those who are closest and most knowledgeable about the local situation. However, the stated policy that the Environmental Protection Act is designed to "fill gaps and complement other existing federal, provincial and territorial legislation" is the wrong approach to take. It does not follow that, just because a gap exists, the federal government is the most competent authority to fill that gap.

A national standard is not likely to ensure the highest level of environment protection. National standards tend to avoid the worst, but they do not ensure the best. This is illustrated by the effluent limitations for discharge to water of phenolics from petroleum refineries. The federal, Ontario, and Alberta rates of discharge to water permitted for newly located and constructed refineries are identical. However, because of the nature of the geology and the technical skills in Alberta, deep disposal wells on refinery sites are common. For new refineries that have disposal wells, Alberta has reduced the permitted discharge to 0.2 pounds of phenolics per 1,000 barrels of product per month compared to 0.3 pounds of phenolics per 1,000 barrels as set by the federal government and used in Ontario and in Alberta for refineries without disposal wells. However, the best standard in Canada is that of British Columbia, which has a level of 0.023 pounds of phenolic discharge per 1,000 barrels of product monthly average for all new and proposed discharges and as a long-range goal for existing refineries. This is to ensure protection for what British Columbia considers to be extremely precious — its coastal environment and salmon habitat, which obviously would not be protected to the extent desired by reliance on federal standards.

An important aspect of the Enforcement and Compliance Policy is the degree of responsibility that it places on industry to collect information and provide that information to the federal government. The federal government will have to develop clear statements of its expectations with respect to this data and encourage compliance through education as indicated in the policy; however, because of the critical importance of information to the implementation of the Act, strong and decisive legal action must be taken wherever necessary to ensure that a complete and accurate information data base is achieved. The power to achieve this objective seems to be available in the Act.

There is also the opportunity for the general public to assist with achieving compliance with the Act. In many instances, identification of actual or impending environmental problems has been the result of public vigilance. The general public should be viewed as a vast store of information about environmental activities, the distribution and use of toxic substances, and possible violations of the Act and its regulations. Alberta Environment has very successfully used its HELP (Help End Landfill Pollution) program in identifying potentially dangerous landfill sites. A similar approach could be implemented nationally or used provincially to assist with the management of toxic substances.

The choice between administrative and litigative responses to violations of the Act and its regulations is a critical one. According to the Enforcement and Compliance Policy, that decision must consider: (a) the nature of the violation, (b) relative effectiveness in ensuring future compliance, and (c) the relative cost-effectiveness of the various procedures, taking into account both the costs to the federal government and those that would be borne by the violator. The latter decision is to be made by the Minister or enforcement officials acting on the Minister's behalf. The suggestions made previously with respect to allowable variances might be helpful in providing guidance for the use of discretionary authority.

There is likely to be substantial public concern about the government's interpretation of the appropriate occasions to use administrative or litigative responses unless there is substantial involvement by the public in the formulation of clear-cut criteria for the Minister and his staff to use. According to recent surveys, 70 percent of the population favors increased environmental protection. On the other hand, there is great distrust of information produced by those responsible for providing environmental protection. Sixty-nine percent of the population say that they believe environmental and consumer groups rather than government (23%) or industry (8%). In this context, there will be considerable controversy about what information is used in the decision-making process, who provides that information, whether information obtained from industry can be used in litigation, and how one balances private versus public costs (financial and environmental).

At the federal level, as well as at the provincial level, it is essential that the environment departments have clear, unambiguous goals for their environmental protection activities. These goals must be accompanied by a well-defined process by which goals might be achieved. The general goal of the Environmental Protection Act — to better manage toxic substances and minimize the further contamination of the environment — is not adequate. Development of the guidelines, objectives, and codes of practice in accordance with Section 4 of the Act provides an opportunity to develop detailed goals for environmental protection.

One suggestion to help move in this direction has already been made, with respect to including in the Environmental Protection Act the concept of tolerable, acceptable, and desirable levels as contained in the Clean Air Act. However, it would also be essential that, before adopting environmental quality objectives, guidelines, and codes of practice, the Minister consult fully with the provinces, the various industries likely to be affected, and most particularly with the general public. Objectives and guidelines are only in part technical. The levels they are set at depends on the quality of environment desired by all Canadians.

The development of explicit statements of policy would make all interested parties much more aware of the government's intentions and provide a clear standard against which the success of implementation and enforcement of the Act could be judged. Clear recognition of the government's goals should provide much-needed guidance for developing the Enforcement and Compliance Policy as well as providing a continual reminder to Departmental staff of what the Act and its regulations, which they administer, are expected to achieve.

There is another consideration as well. If provincial environmental quality standards or enforcement are unacceptably low, there is a possibility that the federal government will bring in higher standards or more vigorous enforcement. This approach contains substantial potential for conflict and underlines the importance of a consultative approach to the development of guidelines and objectives.

Another suggestion that would increase the credibility of the Environmental Protection Act would be to remove the explicit references to the "due diligence" defense in Sections 60 and 23(3). In Section 60, for example, a person shall not be found guilty under this Act if he "establishes that the offense took place without his knowledge or consent and that he took all necessary measures to prevent its commission." These points are easy for the accused to establish and hard for the Crown to refute.

The due diligence defense has been available to those accused under environmental regulations since the Supreme Court of Canada's judgement in 1978 in R. vs. Sault Ste. Marie. It would be available to any accused even in the absence of reference to it, and its codification in the Act means that further shifts in interpretation by the Courts will be difficult.

It is not enough for the federal government to point out the severe penalty provisions in the Environmental Protection Act and to state its intentions to strictly enforce those provisions. It likely will take years of strict application of its authority

for the federal government to be viewed as a strong environmental advocate. A report by the Canadian Environmental Advisory Council[1] points out the reluctance of Environment Canada to enforce its legislation, even when it had clear and sole responsibility, such as in the national parks. The report concludes that the delegation of administrative powers to the provinces and excessive fears of federal-provincial conflicts are having negative effects on the implementation of Environment Canada's legislative mandate and undermine the confidence of Canadians in the Department.

4. CONCLUSION

The recommendations in this Report, for improvements to the Environmental Protection Act, have been developed with a view to clarifying the roles of provincial Departments of the Environment and enhancing the credibility of Environment Canada. Conflicting, overlapping, or fuzzy lines of demarcation are not advantageous. It is always possible to hope that some superior power will come along and solve all problems and it is tempting to promise to do so, as seems to have happened with the Environmental Protection Act. The new Act has a useful role, particularly in areas where only federal authority can be effective, such as developing national environmental objectives, collecting information, and regulating the import, manufacture, and export of toxic substances. However, cradle-to-grave protection cannot be achieved by the federal government alone. It will require provincial powers and provincial co-operation.

***

2.2 REVIEW PANEL ON ENVIRONMENTAL LAW ENFORCEMENT

In June, 1987, the Minister established a panel to review the enforcement of Alberta Environment's environmental legislation. Two years before that date, the ECA completed reviews of the administration of the Clean Air and Clean Water Acts, two critical components of the Province's legislated protection of the environment. The ECA was asked to make a presentation to the task force, and this was released to the public at the 1987 Annual Joint Meeting as a 26-page report, *Improving Enforcement of the Clean Air Act and the Clean Water Act*. Major themes in the ECA presentation were:

a) There is a need for explicit long-term goals for the quality of Alberta's air and water, and establishment of these goals requires effective public involvement.

b) The present regulatory philosophy is oriented toward "regulating the release of contaminants" in contrast to "protecting the environment by minimizing pollution." A change in policy, supplemented by minor legislative changes, is required.

c) The regulations should be amended to provide for absolute maximum emission limits applicable to emissions from all sources. The terms and conditions attached to operating licences should reflect the concept of allowable variance in emission levels to spell out explicitly the emissions permitted and the permitted variation under operating conditions. Excursions beyond maximum emission limits and licence limits

1 *Enforcement Practices of Environment Canada*. January 1987. A Statement by the Canadian Environmental Advisory Council. Cat. No. EN 92-4/1987. Minister of Supply and Services Canada.

should be considered unacceptable and result in immediate and appropriate enforcement action. The public should be involved in the setting of effluent standards and in the review of licences.

d) An Environmental Enforcement Division should be established.

e) Information should be made available to the public on a regular basis concerning: compliance, monitoring, and progress with activities directed toward achieving environmental protection.

f) The public should be asked to report environmental offenses through an Environment Watch program.

2.3 ALBERTA CONSERVATION STRATEGY

During 1987, considerable effort was directed toward the development of an Alberta Conservation Strategy. The development of a conservation strategy inevitably requires the review and assessment of current environmental policy and programs. The concept of sustainable development is integral to a conservation strategy and a major instrument in achieving sustainable development is the maintenance of the quality of air, water, and land. These concepts were a major focus of activities of the Public Advisory Committees in 1987 (see Chapter 4), and are being reviewed through two means — workshops and drafting of discussion papers. Both of these approaches were assisted by staff during the past calendar year. Research staff organized and supported the following workshops for PAC Subcommittees:

Hewitt Oil (Alternative Conflict Resolution)
Alberta's Future Urban Communities
Soil Conservation
Recreation and Tourism
Wetlands and Parks
Forestry
Forest Land Use

Three Alberta Conservation Strategy discussion papers that were either printed or in the final stages of editing by the end of the 1987 calendar year were:

Prospectus for an Alberta Conservation Strategy (updated)
Reserves for Nature
Resolving Conflict: A Case Study

3. PUBLIC HEARINGS

The Report and Recommendations on Recycling of Waste in Alberta was completed and released to the public on May 5, 1987. This completed a process which progressed through the following stages:

February, 1985 — Terms of Reference for the public hearings were issued to the Environment Council.

February to December, 1985 — Preparation of seven background reports and a video tape.

January, 1986 to April 1986 — Pre-hearing information program.

April 1986— Appointment of a hearing Panel.

May and June 1986 — Public hearings at 11 locations.

July to October 1986 — Meetings with 20 government and non-government organizations.

October 1986 to March 1987 — Preparation of the Report and Recommendations.

April 1987 — Submission of the Report and Recommendations to Cabinet and the Minister of Environment.

May 1987 — Public release of the Report and Recommendations.

May and June 1987 — Public information program.

The Report and Recommendations on Recycling was prepared in two formats — a 24-page summary report, and a 132-page technical report. These and all supporting publications are available from the ECA library. Distribution of the recycling publications as of December 31, 1987 was as shown in Table 1.

The Recycling Report has 68 recommendations intended to increase recycling in Alberta and to protect the environment. Those recommendations fall into five general themes.

The first theme is to treat recyclable materials fairly and equitably, in the same manner as other waste disposal options, usually characterized as

TABLE ONE

Distribution of Recycling Reports

Reycling of Waste in Alberta: Summary Report and Recommendations	3,922
Recycling of Waste in Alberta: Technical Report and Recommendations	2,055
Municipal Solid Waste — Alberta's Untapped Resource?	2,005
A Social Perspective of Recycling in Alberta	1,635
Resource Recycling in Alberta	2,220
Garbage to Gold? Issues and Opportunities: Terms of Reference and Background Information	2,546
Economic Barriers to Recycling	1,900
The Use of Muncipal Waste as Fuel	1,885
Bibliography of Recycling	921

"the level playing field." Recommendations in this area include the removal of discrepancies between garbage collection and disposal, which is usually heavily subsidized, and recyclable materials, which are expected to pay their own way. An important element of this even-handed treatment is the identification and incorporation of the full, true costs of alternate disposal methods such as landfill by incorporating replacement costs, environment protection costs, and contingent liability exposure.

The second theme is to adopt the "Four R's" of waste management. These are to REDUCE the production of waste, to REUSE and RECYCLE materials presently disposed of as waste, and to RECOVER energy from materials that cannot be reused or recycled.

The third theme is to inform and educate all elements of society about recycling.

The fourth theme is to establish systems that treat recycling enterprises equitably. Many recyclers are producing commodities that must compete against goods that receive preferential treatment under existing federal and provincial policies. Those inequities must be removed.

The fifth theme is the development of markets for recycled goods. There are 22 recommendations relating to developing a supply of recycled goods and increasing the demand for those goods.

The Recycling report has been well received by the Minister of Environment, and has been distributed extensively. By the end of 1987 commitments had been made to extend Edmonton's curbside recycling program, and to amend the Beverage Container Act. Such support bodes well for Alberta's future waste management and recycling programs.

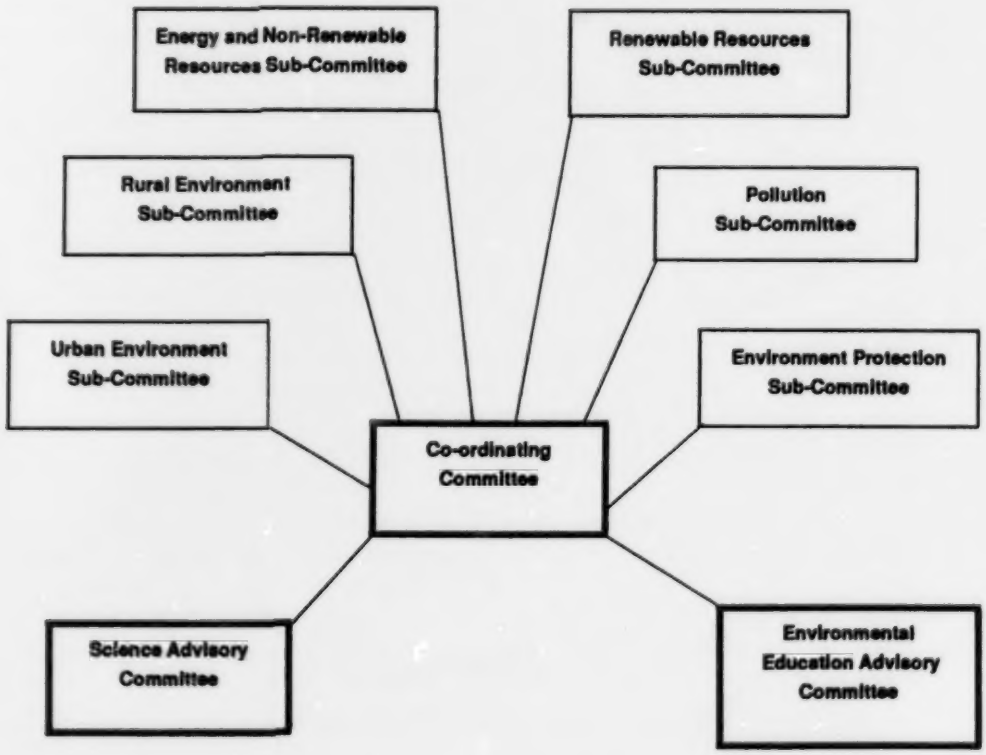
The Environment Council continues to receive and respond to requests concerning its Recycling Report and Recommendations, and recycling activities in Alberta.

4. PUBLIC ADVISORY COMMITTEES

The Public Advisory Committees are the volunteer arm of the Environment Council and serve as a major interface between the Government of Alberta and its citizens with regard to environmental matters. The Public Advisory Committees represent the broadest possible cross section of non-governmental organizations with an interest in the environment, including chambers of commerce, academics, and industrial associations, as well as natural history groups. The Public Advisory Committees identify and consider emergent environmental issues and problems; they serve as an early warning system, express public concern, and provide advice to government. Public input into the government decision-making process ensures a high degree of credibility and public confidence in government programs and policies. The effective communication networks of the member organizations of the advisory committees are an important mechanism used to enhance the general public's awareness of government initiatives.

The operating guidelines of the Public Advisory Committees to the Environment Council of Alberta are contained in the *Roles Document*, which in consultation with the Minister was revised and updated in September, 1987.

4.1 ORGANIZATION OF THE PUBLIC ADVISORY COMMITTEES



4.2 MEMBERSHIP

The **Public Environmental Advisory Committee** is made up of affiliated and unaffiliated members. Affiliated members are nominees of various organizations, associations, and institutions. These groups have a demonstrated interest in the environment, represent a significant constituency, and are reasonably provincial in scope. Unaffiliated members are individuals whose special capabilities are recognized by the Environment Council to be of exceptional value. They are usually long-term Public Advisory Committee members who no longer represent a specific group. The current roster stands as follows:

130 member organizations
121 representatives currently appointed
37 alternate members
19 unaffiliated members

The **Environmental Education Advisory Committee** is composed of professional educators and communicators from government, broadcasting and related industries, academic institutions, the teaching profession, and the public at large. Currently, 16 individuals are members.

The **Science Advisory Committee** is a multidisciplinary group, composed of scientists drawn from academic institutions, government, scientific agencies, and industry. Twenty-one members are formally appointed at this time.

As of the end of the year, 214 dedicated citizens are formally appointed to the Public Advisory Committees. This represents an increase of seven since the end of last year. The individuals who serve on the various committees and sub-committees are listed in the respective chairman's report.

4.3 CHAIRMEN'S REPORTS

4.3.1 CO-ORDINATING COMMITTEE

...responsible for the overall co-ordination and efficient functioning of the three Public Advisory Committees.

Report from the Chairperson — Mrs. Maryhelen Posey

As I complete my year as Chairperson of the Public Advisory Committees, I should like to offer you an overview of this year from my perspective and take a quick look at the future — a sort of state-of-the-PAC report.

We began this year with the knowledge of major budget cuts, and our usual tasks of organizing and co-ordinating our activities were made more critical because of the need to accomplish our objectives with the reduced resources. The ingenuity of the members of the Co-ordinating Committee and ECA staff made it possible for us to run a very efficient, streamlined year of sub-committee meetings, including four major workshops. That all members of PAC rose to necessity did not surprise me — you are all accustomed to performing the impossible on an insufficient resource base — but I must express my gratitude and admiration. I must also voice a warning: do not let it appear that such cuts can be indefinitely sustained without cost; eventually even PAC will falter if inadequately nourished.

Our determination to proceed with the development of a Conservation Strategy for Alberta carried through the year with all sub-committees contributing, as well as maintaining activity related to topical issues, and I am confident that this PAC-wide process will continue. We must take considerable moral support from the final report of the National Task Force on Environment and Economy, and I hope PAC can use it as a springboard to our future efforts.

We have enjoyed the novelty of a Minister of Environment who is interested in meeting with us for discussion of issues, who has expressed enthusiasm for the Conservation Strategy efforts, and who appears well-informed and interested in major environmental concerns. We are, however, anxious to see such expressions of support as that for the recycling report, bolstered by a plan of action. Mr. Kowalski's involvement in and endorsement of the Report of the National Task Force on

the Environment and Economy is especially heartening to us.

This support has encouraged us to make an early offer to Mr. Kowalski of our assistance in implementing the recommendations of the task force for Alberta, and I know he can look to PAC for a ready supply of informed and capable advice as he requires it.

Before I leave you, I have one small insight gleaned during the year to share. (One real insight in a year is pretty good going, I suspect.) I have had to explain the structure and function of PAC to a wide diversity of people, in two languages (some of these people may now be even more confused than they were before), and somehow it is apt to sound very unstable — the enormous number of different people who make it up over the course of a few years suggests that our views may be as the shifting sands. I have looked back over all our annual reports and in case you were in any doubt yourselves, I can tell you that this is not true.

The specific issues we have addressed and the details of our proposals vary widely. But under it all, there is a common thread of purpose: to see decisions based on good information, with broad and well-heeded public involvement, in the interests of what we have now learned to call "sustainable development." That this purpose will continue to sustain PAC into the future and make it a continuing source of wise counsel, I have no doubt.

I should like to express my deepest gratitude to the Chairpersons of the Sub-Committees and the Steering Committee on the Conservation Strategy, to Bob Richardson and Jean Sloan for regularly propping me up and standing in for me, and to the staff of the ECA, especially Randy, for making me feel as though I had accomplished something, when they had done it all themselves, with mirrors.

Mrs. Maryhelen Posey
Chairperson, Co-ordinating Committee

Members of the Co-ordinating Committee

Mrs. M. Posey — Chairperson
Mrs. J. Sloan — Vice-Chairperson
Mr. R.M. Richardson — Past Chairperson
Sub-Committee Chairpersons
Mr. G. Stewart — Energy and Non-Renewable Resources
Mr. H. Fauser — Environment Protection
Ms. J. Hedenstrom — Pollution
Mr. B. Meller — Renewable Resources
Dr. S. Dalton — Rural Environment
Mr. W.A. Flook — Urban Environment
Mr. R. Mrazek — Environmental Education Advisory Committee
Dr. P. Mahaffy — Science Advisory Committee

4.3.2 PUBLIC ENVIRONMENTAL ADVISORY COMMITTEE

...acts as a barometer of public opinion and concern on environmental issues. As an environmental advocate it provides ongoing advice to the Environment Council and government departments on emerging issues as well as feedback on various programs and policies. Communication networks help to enhance general public understanding of government initiatives.

4.3.2.1 Energy and Non-Renewable Resources Sub-Committee

...efficient and environmentally responsible use of energy and non-renewable resources to sustain the long-term economy of Alberta, with a gradual transition to a greater reliance on renewable resources.

Report from the Chairman — Mr. George Stewart

The Energy and Non-Renewable Resources Sub-Committee held six meetings in 1987. Agendas were generally chosen to provide input to the various Alberta Conservation Strategy (ACS) sectoral groups chaired by members of Energy and

Non-Renewable Resources (oil and gas, coal, minerals, and renewable energy sectors).

The most significant input to the ACS came from the March 27 meeting, which dealt with resolution of conflicts arising out of resource developments. The meeting involved a review of the Hewitt Oil application for sour gas processing in the Golden Spike Area. The case study has been incorporated into a major paper by John Lilley on conflict resolution. This paper, which was discussed at the Sub-Committee's September meeting, will be of assistance in compiling an ACS.

Another meeting, May 1, heard a discourse on energy pricing and its relation to energy use. How the information presented will be used in the ACS development is not clear — however, it is certainly clear that putting a high price on energy is one way to limit its use. The meeting of March 6 heard a description of the engineering challenges facing a high-sulphur well production test in the foothills area. There was also a meeting, February 6, dealing with "Environmental Philosophy."

One meeting, October 20, was jointly held with the Pollution Sub-Committee to hear a presentation on the Canadian Petroleum Association's (CPA) Environmental Code of Practice. The Code of Practice is an excellent statement, but how the Code will be policed within CPA and, in particular, how it will be enforced or encouraged among non-member companies, is of concern.

Relative to ACS, this Chairman is concerned that PAC has promised more than it can reasonably expect to deliver with a volunteer organization. The themes of "too little time," "overworked," "can't get members," etc. are too often heard in reviewing progress of the ACS sectors. The recent development in which ECA professional staff has authored material is to be commended and encouraged.

The Sub-Committee participated in the Small Power Hearing held by the Energy Resources Conservation Board (ERCB) and the Public Utilities Board (PUB), dealing primarily with pricing of the excess output of small power producers. The Sub-Committee submitted its December 1985 Resolution on Wind Energy to the hearing and asked that the Board's decision be such as to fully encourage development of alternatives to fossil fuels.

Toward year-end the Sub-Committee resolved how to follow up on its 1986 Resolution dealing with conservation of gas encountered in farm wells. It appears the Sub-Committee will be dealing primarily with the Farmer's Advocate in this matter.

The Sub-Committee also authorized a letter to the Honorable Neil Webber, Minister of Energy and Natural Resources, expressing the view that, despite the need for budgetary constraints, the efforts of the Energy Conservation Branch should be continued on the strength of immediate economic benefits to Albertans.

Finally, as a personal observation, there are apparent reasons for concern about the credibility of PAC as the leading voice on environment in Alberta. First, the federal energy policy development (Energy Options) session in Calgary invited Alberta Environmental Network — not PAC — to provide environmental input to the meeting (Alistair Crerar was invited as a representative of the ECA, but was unable to attend). Secondly, a number of environmental groups have appeared on the scene recently who are not represented on PAC (for example, Toxics Watch). Further, this Chairman was not aware of "Energy Awareness Week" beginning October 5, 1987, nor of its objectives, nor of its activities during the week.

My heartfelt appreciation for the support of Sub-Committee members and ECA staff goes without saying.

Mr. George Stewart
Chairman, Energy and Non-Renewable Resources Sub-Committee

Members of the Energy and Non-Renewable Resources Sub-Committee

Mr. George Stewart, Chairman — Unaffiliated
Mr. D. Broughton — Unaffiliated
Dr. W. Buchta — NAIT
Mr. D.A. Clarke * — SAIT
Dr. R. Gehrke — Alberta Chiropractic Association
Mrs. M. Goodwin * — Alberta Women's Institute

Mrs. H. Heacock — Calgary Local Council of Women
Mr. J. Hirsch — City of Medicine Hat
Ms. J. Hodgson — Calgary Chamber of Commerce
Mrs. B. Hunter — Consumers Association of Alberta
Mr. A. Kennedy — Coal Association of Canada
Mr. R.G. Kuhn — Save Tomorrow Oppose Pollution (STOP)
Prof. H. Madill * — University of Alberta
Mr. D. Moffat — Alberta Federation of Labour
Mrs. A. Parkinson — Community Planning Association of Alberta
Mrs. B. Paschen — Unaffiliated
Mr. G. Paschen — Archeological Society of Alberta
Mr. B. Peel — Electric Utility Planning Council
Dr. J.E. Rapson — Solar Energy Society (Calgary Chapter)
Dr. W.A. Ross — University of Calgary
Mr. J.E. Staples — Association of Professional Engineers, Geologists and Geophysicists of Alberta
Mrs. M. Stephenson — Alberta School Trustees
Mr. N. White — Unaffiliated
* No longer on Sub-Committee

EEAC Rep — Dr. J. Godfrey

SAC Rep — Dr. Dixon Thompson

4.3.2.2 Environment Protection Sub-Committee

> ...preservation of native species and natural environments for their intrinsic values, as well as the conservation of these resources for outdoor recreation and tourism.

Report from the Chairperson — Mr. Horst Fauser

Despite a reduction in Sub-Committee meetings, our group was very busy indeed. Spearheading our involvement with the Conservation Strategy were:

Robyn Usher — Wetlands
Guy Swinnerton — Parks
Pam Wight — Tourism

Two workshops were held to speed things along. One addressed heritage values, and the second one dealt with tourism.

Current issues addressed were: grizzly bear management in Alberta, with guest speaker Brian Horejsi. The Department of Fish and Wildlife declined to participate in the discussions. The progress of ecological reserves and their establishment was constantly monitored. Dorothy Broadbent, Past Chairperson for our Sub-Committee, will make a presentation on our behalf in January, 1988, to the Public Advisory Committee on Ecological Reserves. Curt Schroeder presented a brief on our behalf to the Task Force on Crown Grazing Lease Conversion in Calgary.

Considerable effort was put into opposing the expansion of Sunshine Ski Resort in Banff National Park and Bill C-30. We were gratified to learn that South Moresby National Park was established in British Columbia, since we were actively involved in that issue.

Mr. Michael Muc, Vice-Chairperson of our Sub-Committee, took time out to fill in for me at one Co-ordinating Committee meeting.

Eva Butler is working on the various issues with regard to Big Lake. A thank you to Ducks Unlimited for making their jet boat available and, despite the wind, an impressive tour was made possible.

Also addressed were the following issues:

Hidden Creek Logging
Highway construction through Wood Buffalo National Park
Stirling Lake Heritage for Tomorrow Wetlands Sewage Lagoon
U.S.A. Farm Bill
Wildlife Support Fund
Kimiwan Lake
Nose Hill Park in Calgary
Natural Areas

For the coming year, I suggest our Sub-Committee make an effort to get provincial legislation and regulations established to give the Department of Forestry, Lands and Wildlife the ability to enforce road closures, motorized travel through prime protection zones, and other sensitive areas.

Lately, we have had an active participation of at least 15 members at the meetings. A great thank you to all the members who took part in our deliberations and helped draft letters, address issues, and present briefs on our behalf. It made it very easy for me to chair such an active group. I

have decided to step down as Chairperson, but will remain a member of the group.

Co-operation of the staff was efficient and productive as always, and we could not have functioned without it.

Mr. Horst Fauser
Chairperson, Environment Protection Sub-Committee

Members of the Environment Protection Sub-Committee

Mr. Horst Fauser, Chairperson — Alberta Fish and Game Association
Mrs. L. Allison • — Unaffiliated
Ms. B. Beswick — Canadian Parks and Wilderness Society (Calgary Chapter)
Mr. C. Blackburn, Jr. — Foothills Protective Association
Mrs. D. Broadbent — Unaffiliated
Ms. E. Butler — Edmonton Local Council of Women
Mr. B. Calverley — Ducks Unlimited Canada
Mr. T. Code — Alpine Club of Canada
Mr. C. Dunkley — Unaffiliated
Mr. G. Fabris — Red Deer College
Mrs. L. Feltham • — Health Unit Association of Alberta
Dr. J. Harter • — University of Lethbridge
Mr. M. Henderson — University of Alberta
Mr. R. Holmberg — Athabasca University
Mr. D. Kariel ⁺ — Sierra Club of Alberta
Ms. B. MacCallum ⁺ — Alpine Club of Canada
Mrs. J. Meikle ⁺ — YWCA
Ms. L. Miller • — Alberta Motion Picture Industries Association
Dr. M. Muc — City of Camrose
Mrs. M. Newton — Women of Unifarm
Mr. D.F. Penner ⁺ — Alberta Society of Professional Biologists
Mr. H. Pharis — Health Unit Association of Alberta
Mr. R. Richardson — Unaffiliated
Mrs. R. Robinson — YWCA
Dr. R. Scace — Unaffiliated
Mr. C. Schroeder — Swift Fox Conservation Society
Mr. M. Scott-Brown — Alberta Society of Professional Biologists
Mr. S. Shwetz • — Alberta Association of Municipal Districts and Counties
Mr. G. Rollie Stewart — Southern Alberta Environmental Group
Dr. G. Swinnerton — Canadian Parks and Wilderness Society (Edmonton Chapter)
Ms. R. Usher — Canadian Society of Environmental Biologists and Wildlife Society of Canada
Mrs. P. Wight — City of Edmonton
Mr. H. Zenger — Sierra Club of Alberta
• No longer on Sub-Committee
⁺ Attended Sub-Committee as Alternate

EEAC Rep — Mr. J. Martin

SAC Rep — Dr. T. Veeman

4.3.2.3 Pollution Sub-Committee

> ...the impact of human activities on the quality of air, water and soil and the associated health effects on plants, animals and man.

Report from the Chairperson — Ms. Joanne Hedenstrom

The Pollution Sub-Committee has always lobbied for public input into the establishment of laws and guidelines on pollution control. The following are just some of the documents on which we provided input during 1987:

1) Environment Canada's proposed Environment Protection Act
2) The Draft Enforcement and Compliance Policy which accompanies the Environment Protection Act
3) Alberta Environment's document *Environment Protection Enforcement and Review*
4) Alberta Environment's *Draft Policies re: Hazardous Wastes and Recyclable Materials.*

In addition to these presentations we have continued to express our concern about pollution in the following fields:

a) chemical application in both Crown rangeland and Crown forest
b) the establishment of satisfactory standards for pentachlorophenols and dioxins in our environment

c) the continued and increased funding into alternative methods of insect control, including research on biological control of insects

d) the need for better sulphur recovery from Alberta's gas plants

e) the need for baseline human health studies at the Alberta Swan Hills Hazardous Waste Facility

f) the establishment of an "Environment Watch" program by Alberta Environment

g) the maintenance of high standards of water quality in Alberta.

The Pollution Sub-Committee continues to alert the public to violations of the Clean Air and Clean Water Act, and in 1987 was able to give publicity to a violation of the Act that, it seemed, might escape prosecution. Also, we have brought forward three resolutions to the Annual Joint Meeting:

1) Reclamation of Abandoned Industrial Sites
2) Sewage Effluent Irrigation
3) Disposal of Used Pesticide Containers

Because the work of the Pollution Sub-Committee has continued to increase, we have established six committees under the following titles: Air Quality, Indoor Air Quality, Waste Management, Environment Protection, Toxic Chemicals, and Water Quality. So far, these committees have enabled us to continue our heavy work load, even though we now have fewer meetings.

Ms. Joanne Hedenstrom
Chairperson, Pollution Sub-Committee

Members of the Pollution Sub-Committee

Ms. J. Hedenstrom, Chairperson — Unaffiliated
Mr. B. Alleyne * — Alberta Public Health Association
Mr. M. Andresen — Fort Saskatchewan Regional Industrial Association
Mrs. G. Bako — Alberta Cancer Board
Mr. W. Boddy + — Alberta Lung Association
Mr. N. Carlson — City of Wetaskiwin
Dr. M.H. Chaudhry — Lakeland College — Vermilion Campus
Mr. G. Ferguson — Cascade Society of Mount Royal College
Dr. R.J. Fessenden — Alberta Research Council
Mr. R. Gillespie — Strathcona Industrial Association
Mr. R. Goodwin + — Alberta Fish and Game Association
Mrs. S. Henderson — Alberta Association of Registered Nurses
Mr. T. Hodge — Alberta Public Health Association
Mr. M.T. Homan — SAIT
Dr. M. Hussain * — Weed Control Research Society of Alberta
Mr. W. Irwin — Canadian Institute of Public Health Inspectors (Alberta Branch)
Mr. W. Koning — Citizens for Public Justice
Dr. M. Kostuch — Unaffiliated
Mrs. D.J. Lewoniuk — Alberta Lung Association
Mr. H. Lillo — Energy Resources Conservation Board
Mr. I.S. Macdonald + — Strathcona Industrial Association
Dr. M.J. MacQuarrie — Alberta Medical Association
Mr. G. Merrick — Alberta Fish and Game Association
Mr. A. Metcalfe — Canadian Manufacturers' Association
Mr. D. Moffat — Alberta Federation of Labour
Mrs. C. Mutch + — Medicine Hat College
Dr. R. Mutch — Medicine Hat College
Dr. P. Ramalingam — Canadian Union College
Mr. R. Romanetz — City of Drumheller
Mrs. J. Roschlaub — Alberta Pharmaceutical Association
Mr. W.K. Ross — Unaffiliated
Mr. A. Theobald * — Alberta Federation of Labour
Mr. D.R. Thomas — Law Society of Alberta
Dr. L. Wojtiw — Canadian Meteorological and Oceanographic Society
Mr. B. Worbets — Canadian Petroleum Association

* No longer on Sub-Committee
+ Attended Sub-Committee as Alternate

EEAC Rep — Dr. W. Samiroden

SAC Rep — Dr. R. Lane

4.3.2.4 Renewable Resources Sub-Committee

...sustainability of forests, water and wildlife resources.

Report from the Chairperson — Mr. Brian Meller

In 1987, the Renewable Resources Sub-Committee focused on forest land use as its central theme. The intent of this focus included the elaboration of issues pertinent to the development of the sectoral discussion paper for forestry, which, along with others, will form precursors to the development of a provincial Conservation Strategy for Alberta. In addition, the Sub-Committee continued to examine the issue of game ranching in Alberta. The following is a summary of the activities of the Sub-Committee for the year 1987:

January — Mr. Bob Andrews, Director of Wildlife, and Mr. Gerry Lynch, Unit Leader, Big Game Management, Forestry, Lands and Wildlife Department, gave a presentation on game ranching in Alberta. The Sub-Committee feels there are still many unresolved issues on game ranching and will continue to make their views known to the minister.

March — Mr. Fred McDougall, Deputy Minister, and Mr. Cliff Smith, Assistant Deputy Minister, Forestry, Lands and Wildlife, presented a report on the Alberta Forest Service's follow-up on the forestry hearings conducted in 1979. The Sub-Committee is pleased with progress on implementing the recommendations.

May — Mr. Glen Bergstrom, Head, Watershed Management, and Mr. Ron Deeprose, Director, Technical Services Division, Alberta Environment, gave a presentation on watershed management in Alberta.

June — A workshop on forest land use was conducted. This workshop examined in detail the current conflicts among users of forest lands, projected future trends of forest land use, and suggested strategies for future resolution of land use conflicts. Seventeen guests representing the various forest user groups participated in this very successful workshop, along with the Sub-Committee members and ECA staff.

September — A review of the Alberta Conservation Strategy in general and the progress of the forestry sectoral discussion paper was conducted. We expect to have a draft discussion paper by early in the new year.

November — At the time of writing, the issue of biotechnology in the development of new forest products is proposed as the theme for the meeting. Guest speakers have been obtained to speak to this topic.

Several other topics and issues were discussed during the business portion of the meetings. They were:

Public Access/Sale of Crown Lands
Commercial Fishing
Forestry Spraying
Environmental Uses of Unallocated Lottery Funds
Use of Export Tax on Lumber for Forest Management

The Sub-Committee has made significant strides toward accomplishing the objective of elaborating forest land use issues, and contributing to the formation of the forestry sectoral discussion paper.

I would like to thank the Sub-Committee members and the ECA staff who worked so diligently toward this objective. In particular, the efforts of Joan Snyder and Maryhelen Posey are noted for formulating the theme and structure of this year's meetings, as are those of Brian Free, who conducted extensive background work for the workshop and sectoral discussion paper, and Randy Pretty and Archie Landals for their untiring efficiency in co-ordinating the activities of the meetings.

Mr. Brian Meller
Chairperson, Renewable Resources Sub-Committee

Members of the Renewable Resources Sub-Committee

Mr. B. Meller, Chairperson — Lethbridge Community College
Mr. D. Appleby — Cold Lake Community Advisory Committee
Mr. N. Barber — Alberta Trappers' Association
Mr. H. Craig * — Western Barley Growers Association

Dr. B.P. Dancik — Trout Unlimited Canada
Dr. D.K. Elton — Canada West Foundation
Mr. C. Fawcett — United Farmers of Alberta
Mrs. E. Friesen — Unifarm
Mr. H. Gardner — Federation of Alberta Naturalists
Mr. T. Garner — Fairview College
Dr. A.F. Gerrow — Alberta Veterinary Medical Association
Mrs. S. Henderson * — Alberta Association of Registered Nurses
Mr. E. Kure — Unaffiliated
Mr. S. Linington — Northwestern Fishing Co-op
Mr. B. MacDonald * — Grande Prairie Chamber of Commerce
Ms. J. McLean-Hayden — Alberta Wilderness Association
Mr. D. Mallon — Edmonton Chamber of Commerce
Mr. D. Porter — Canadian Petroleum Association
Mrs. M. Posey — Canadian Nature Federation
Mr. G. Ribeiro * — Canadian Water Resources Association (Alberta Chapter)
Mr. A. Rytz — Alberta Forest Products Association
Ms. L. Sherren — Alberta Snowmobile Association
Dr. J. Snyder — Grande Prairie Regional College
Mr. Don Stiles — Canadian Nature Federation
Mr. R. Whistance-Smith * — Unaffiliated
Mr. T. Williamson — Canadian Institute of Forestry
Mr. S. Wiskel * — Western Barley Growers Association
Mr. J. Wooders * — Alberta Trappers' Association
* No longer on Sub-Committee

EEAC Rep — Mr. D. Stoker

SAC Rep — Dr. W.A. Fuller

4.3.2.5 Rural Environment Sub-Committee

> ...sustainability of the rural environment for agriculture, residential and recreation use and the wildlife it supports.

Report from the Chairperson — Dr. Sheri Dalton

The Rural Environment Sub-Committee has successfully completed its first full year of operations, pursuing the specific issue of soil degradation, introduced at our 1986 Annual Joint Meeting workshop. The ultimate goal of the year was, of course, the preparation of the Agriculture Sector Report for the Alberta Conservation Strategy. Dr. Fred Bently (SAC; Department of Soil Science, University of Alberta) put the topics of soils and agriculture in perspective with an excellent overview of the historical aspects of soil use and agricultural practices in Alberta. His Annual Joint Meeting presentation gave us the framework upon which to build our six meeetings of 1987. The Sub-Committee identified three major categories of soil degradation occurring in Alberta (erosion, salinity, and acidity), and agreed that the province must achieve a condition of "sustainable agriculture" in the very near future if our agriculture industry is to thrive. Sustainable agriculture is, by definition, "that which enables continuing agricultural production without enduring impairment of the productivity base and with minimum adverse environmental effects off the farm itself."

The Rural Environment Sub-Committee reviewed current land use practices in the province and identified several major problem areas (such as cumulative damage to the land base resulting from current practices and the lack of adequate land and soil classification). We were assisted in this by guests such as Dr. John Dormaar (Alberta Research Station, Lethbridge), Mr. Sheldon King (High River, Alberta) and Mr. John Hermans (Head of the Soil Conservation Branch at Alberta Agriculture). The information gathered, with suggestions for improvements, will be incorporated into our Agriculture Sector Report.

The Sub-Committee acknowledged the continuing vital role of education, both for its members (toward advising government and development of the Conservation Strategy) and for the general public. Several documents were received and reviewed internally, and we reviewed one document for Alberta Agriculture. *Pride in Alberta*, developed by Alberta Agriculture and intended for use in elementary schools, is an important educational tool, and we commended the Department for its production. Ultimately, it is by educating the young that our goal of sustainable agriculture will most easily be reached and accepted as the norm.

We are looking forward to 1988 with the potential completion of the Agriculture Sector Report and public hearings on the Conservation Strategy. We hope to take the opportunity to broaden our perspective to include other aspects of the rural environment, once the thrust of preparing the Sector Report is past. The members of the Sub-Committee offer their thanks to all the members of the ECA staff, particularly Randy Pretty, Archie Landals, and Dave Buchwald (who has provided indispensable help with our Sector Report). We also commend Mike Kelly on the work he has done with the Canadian Council of Resource and Environment Ministers (CCREM).

Finally, we welcome as new Chair for 1988, Ms. Mary Jane Turnell of the University of Alberta Women's Association. I have appreciated the opportunity to serve as Chair of this committee, and hope that she will find the experience as interesting and educational as I have.

Dr. Shert Dalton
Chairperson, Rural Environment Sub-Committee

Members of the Rural Environment Sub-Committee

Dr. S. Dalton, Chairperson — Concordia College
Mrs. S. Abercrombie * — Unaffiliated
Mr. J. Aplin — Heavy Crude Council
Mr. H. Craig — Western Barley Growers' Association
Ms. H. Hallett — Alberta Women's Institutes
Mrs. A. Hendry — Alberta Rural Ratepayers' Assn.
Mr. R. Hill — Olds College
Mr. E. Jarvis — Western Stock Growers' Association
Mr. R. Jensen — Alberta Irrigation Projects Association
Mr. A. Kolk — Christian Farmers' Federation of Alberta
Mr. G. Miller — Alberta Association of Municipal Districts and Counties
Mrs. S. Nelson Pier — Alberta Conservation Tillage Society
Mr. W.M. Norris — Dryland Salinity Control Association
Mr. H. Patching — Alberta Wheat Pool
Mr. G. Shaw — Alberta Institute of Agrologists
Mr. J. Shemanchuk — Entomological Society of Alberta
Mr. R. Thirnbeck — Mount Royal College
Ms. M.J. Turnell — Academic Women's Association
* No longer on Sub-Committee

EEAC Rep — Ms. W. Zelt

SAC Rep — Dr. S. Dalton

4.3.2.6 Urban Environment Sub-Committee

> ...maintenance and enhancement of urban infrastructure, systems and institutions so as to minimize environmental impacts and improve the livability of our cities.

Report from the Chairperson — Mr. W.A. (Bill) Flook

The year 1987 began with further economic restrictions which required curtailment of the projected number of meetings for the year.

As a result it was generally agreed that the Sub-Committee should direct its interest and activities mainly toward the preparation of its sector for the Alberta Conservation Strategy.

Accordingly, only six meetings were held, one each in January, February, April, June, September and October. The January meeting was devoted to a panel discussion of urban environmental matters with Professors Ira Robinson and Don Detomasi of the University of Calgary, and in February the Sub-Committee received a report on the progress of the City of Edmonton's recycling project for household wastes, from Mr. Zan Figol of the City and Tom Rogers of Alberta Environment. This Sub-Committee feels that this represents an encouraging response to its efforts to promote this form of recycling over the past three years.

The June meeting took the form of a workshop on the Conservation Strategy which was conducted by Mr. Alistair Crerar of the ECA in association with Dr. Michael Hollinshead of Associated Economic Analysts Ltd. of Edmonton, Mr. Ron Tatasciore of EDA Collaborative Inc. of Edmonton, Mr. Sig Dietze of Alberta Urban Municipalities Association, and Mr. John McGowan of Alberta Municipal Affairs.

Under Mr. Crerar's leadership a good deal of information was contributed by the speakers and

there was active participation by all attending members of the Sub-Committee and visitors. Records of the meeting were taken by Kim Sanderson and Mike Kelly and it was generally felt that this represented a turning point for the Sub-Committee toward the preparation of its sector of the Conservation Strategy.

At all of these meetings the Sub-Committee enjoyed the attendance and able assistance of the ECA Research and Liaison staff members. For their constant encouragement and highly competent contributions, the Sub-Committee is most grateful. With these combined efforts, the contributions of Sub-Committee members both written and oral, as well as those from other interested parties, were co-ordinated and compiled for scrutiny by the Sub-Committee.

Initial drafts of the sector papers were then reviewed and changes inserted at and between the September and October meetings. By October the Sub-Committee was confident that a complete first draft of its sector would be ready for presentation to the membership at large at the 1987 Annual Joint Meeting.

For this achievement, your Chairperson wishes to express his sincere appreciation for the efforts of our members, all of whom contributed in various ways. It is worthy of note that due to the initiative of this Sub-Committee, the urban environment is being recognized for the first time as a separate and important entity for consideration within the terms of a conservation strategy. I am pleased to have been associated with this effort and proud of the associates who are making it possible.

Mr. W.A. (Bill) Flook
Chairperson, Urban Environment Sub-Committee

Members of the Urban Environment Sub-Committee

Mr. W.A. Flook, Chairperson — Unaffiliated
Mr. L. Bakshi — Unaffiliated
Mr. E.J. Blais * — City of Grande Prairie
Mr. K. Blom — Unaffiliated
Mr. T. Burton — University of Alberta
Mrs. L. Daniel — Alberta Association of Landscape Architects
Mr. R. Davidson — City of Airdrie
Mr. K. Driver — Unaffiliated
Mr. C. Finlay * — Council of Alberta Rural Ratepayers' Associations
Mr. M. Fitzpatrick * — City of Leduc
Alderman B. Gendreau — City of Ft. McMurray
Alderman N. Hartfelder — City of Leduc
Mr. A.M. Holland — Alberta Association of Architects
Dr. R. Holmberg * — Athabasca University
Dr. D.E. King * — Urban Development Institute of Alberta
Ms. J. Lewin — City of Calgary
Mrs. M. Lutz — Consumers' Association of Canada
Mr. F. Markson — Greater Edmonton Chapter Urban Development Institute
Mr. E.H. Park * — Alberta Urban Municipalities Association
Dr. K. Pennifold — Unaffiliated
Alderman D. Petroski — City of Fort Saskatchewan
Alderman L. Pimm — City of Red Deer
Mr. S. Pragnell — Alberta Association Canadian Institute of Planners
Mr. E. Radbourne — City of Grande Prairie
Alderman C. Reid — Alberta Urban Municipalities Association
Mrs. P. Reschenthaler * — University Womens' Club of Edmonton (Canadian Federation)
Mr. W. Roma * — City of Lloydminster
Mr. P. Rudiak — Keyano College
Mrs. J. Sloan — Lloydminster Chamber of Commerce
Alderman R. Summers-Gill — City of Lloydminster
Dr. J.C. Wood — Unaffiliated
Mr. B. Wyness — Society for the Preservation of Architectural Resources in Edmonton (SPARE)

* No longer on Sub-Committee
* Attended Sub-Committee as Alternate

EEAC Rep — Mr. D. Spalding

SAC Rep — Dr. D. Kvill

4.3.3 Environmental Education Advisory Committee

...to advise the Council and the Government on matters concerning environmental education, to comment on environmental programs both

within and outside of the formal educational systems, and to assist in the formulation, development and implementation of such programs wherever possible.

Report from the Chairperson — Mr. Rick Mrazek

The Environmental Education Advisory Group had a very productive year, which was paced by six meetings during 1987. The main thrusts of the year's efforts included the following:

1) To identify environmental issues in Alberta that need to be addressed in an educational sense and to offer direction, leadership and co-ordination or the necessary impetus to lead to action.

2) To review existing programs that are, or could be, effective environmental education activities with the purpose of evaluating effectiveness, providing support, offering encouragement, providing recommendations, and promoting co-operative support between agencies when possible.

3) To identify and communicate to leaders responsible for students and other young people environmental education projects in formal and community settings.

4) To address the Alberta Conservation Strategy and move towards development of an approach to educating the public in terms of the Strategy.

These main themes were subsumed within an overriding priority of the Advisory Committee this year, which was to strengthen our relationship and communication with the Co-ordinating Committee and other PAC Committees.

Following the January 21 meeting that set out these tasks, our direction was reinforced at the February 10 Co-ordinating Committee meeting with the Honorable Ken Kowalski when the Minister of Environment confirmed that support and development of environmental education was one of his department's priorities for the coming year.

At the March 18 meeting, a presentation by the Friends of Environmental Education Society of Alberta relating possible avenues of involvement with the EEAC in relation to the Alberta Conservation Strategy, marked the beginning of the Committee's exploratory arrangement for the development of an educational resource focusing on the Alberta Conservation Strategy.

The April 22 meeting welcomed Alberta Education representatives, Mr. Bernie Galbraith (Junior High School Science Program Manager) and Mr. Phill Campbell (Senior High School), who presented an overview of the new curriculum directions resulting from the Secondary Education Review. Environmental issues and environmentally based studies included in these changes were the focus of this dialogue. From this initial exchange of ideas, this relationship has grown to the point where the Curriculum Branch of Alberta Education has requested the assistance of the Science Advisory Committee in reviewing the content base of environmental issues addressed in new science curricula.

Kim Sanderson and Mike Kelly conducted a session on June 10 dealing with the World Conservation Strategy and PAC's involvement in producing an Alberta Conservation Strategy. This initiated the Committee's drive to produce a sectoral contribution to the Alberta Conservation Strategy, related to environmental education, which is in its final draft stages.

June also saw the efforts of many PAC members come to fruition with the announcement of the first recipients of the Alberta Environment Awards. Dan Stoker, (a well-known environmental educator), the SEEDS Foundation, and Shell Canada Ltd. were selected from more than 60 nominations. Dr. Sheri Dalton and Rick Mrazek represented the Environment Council of Alberta on the Awards Committee. On behalf of the Committee, a letter of thanks was sent to Dr. Julian Guay, Ms. Sally Banks, and Mrs. Corlaine Gardner — three former members of EEAC — for their pioneering efforts in developing the concept of the awards.

On September 30, assisted by Mike Kelly, the Committee appraised the possibilities for environmental education in Alberta resulting from the Report of the National Task Force on Environment and Economy released September 24. The Committee offered support for the integration of economic and environmental concerns in discussions on the applications of future technologies and decision making in Alberta's new school curricula.

The year and subsequent November 18 meeting saw a number of initiatives come to completion. These included proposals for Communicating the Conservation Strategy (one of which was distributed through the Co-ordinating Committee); development of a format for approaching groups and organizations for information regarding the Conservation Strategy; a review of some of the many existing government-sponsored environmental education programs; and ECA participation on the Joint Committee on Environmental Education, where 13 government departments and agencies that have some role in environmental education are represented.

Space does not permit complete acknowledgement of the individual Committee members' active promotion of very successful events such as Wildlife '87 and Environment Week; however, it should be noted that these efforts have a definite impact on promotion of environmental education in Alberta and are greatly appreciated.

A very special thanks is extended to Dan Stoker for his seemingly endless contributions to this Committee over the years.

The Environmental Education Advisory Committee gratefully acknowledges the contributions of all its retiring members, as well as the Environment Council's staff for their always supportive and patient assistance.

Mr. Rick Mrazek
Chairperson, Environmental Education Advisory Committee

Members of the Environmental Education Advisory Committee

Mr. Rick Mrazek, Chairperson
Mr. D. Merrills, Vice-Chairperson
Dr. J. Godfrey, Membership Chairperson
Mrs. M. Bailey
Dr. L. Bakshi *
Mr. B. Batycky
Ms. E. Beaubien
Dr. A. Einsiedel, Jr.
Mrs. J. Finlay
Dr. J. Guay *
Ms. L. Johnson *
Ms. A. Klimke
Mr. J. Martin
Mr. B. Ogston
Mr. W. Pearce *
Dr. W. Samiroden
Mr. D. Spalding
Mr. D. Stoker
Mr. B. Wylie
Ms. W. Zelt
* No longer on EEAC

4.3.4 Annual Report of the Science Advisory Committee

> ...to provide technical and scientific advice and assistance to the Council.

Report from the Chairperson — Dr. Peter Mahaffy

The Science Advisory Committee met as a committee of the whole on two occasions in 1987, on March 25 and May 27. Most of the work of the Committee was carried out by individuals acting on behalf of or at the request of the Committee.

In 1987, Dr. Frank Kozar and Dr. Robert Swanson became new members of SAC and Mr. Bill Wishart was reappointed to SAC after a hiatus of several years. At the May meeting, Dr. Peter Mahaffy stepped down as Chairperson, and an election for new officers was held. Dr. Sheri Dalton was elected as the new Chairperson, Dr. Bob Lane the new Vice-Chairperson, and Dr. Bill Fuller, Dr. Terry Veeman, Dr. Peter Mahaffy, and Dr. Paul

Woodard constitute the rest of the Executive Committee.

It was mentioned in the 1986 SAC annual report that a priority for SAC in 1987 was to improve the liaison with Sub-Committees within the Environment Council of Alberta. Considerable effort has been devoted to this matter by several members of SAC. In some respects, this has been successful. Improving the services provided to Sub-Committees within the ECA remains a priority to which SAC must give further attention in 1988.

There have been a number of issues before SAC this year, originating from SAC itself, PAC Sub-Committees, ECA research staff, and government departments. Items dealt with by SAC in 1987 include:

Energy Resources Conservation Board Noise Guidelines

A technical review was provided to the ERCB of the proposed noise guidelines for facilities associated with the energy industry in Alberta. The assistance of Dr. Jim Love and Dr. Harvey Buckmaster from the University of Calgary is gratefully acknowledged in providing comments for SAC.

Draft Standards for Municipal Water Supply Facilities, Sewage Works and Storm Drainage Systems

Technical comments on proposed standards for wastewater treatment and disposal were provided to the Municipal Engineering Branch of Alberta Environment. SAC would like to acknowledge the comments provided by E. Tsai from Environment Canada.

Southwestern Alberta Medical Diagnostic Review (Spitzer Report)

SAC devoted a considerable effort in 1987 to soliciting answers to some questions about this report raised by the Pollution Sub-Committee. Several questions were raised with the author and members of the Scientific Advisory Board, and a response was provided to the Pollution Sub-Committee.

Herbicide Use for Forestry Management

There was considerable public interest in 1987 in the general topic of the use of herbicides as a forestry management tool in Alberta. Specific aspects of this topic have been brought to our attention from several different sources. The general topic remains on the agenda for the Committee, and we are in the process of determining whether there is sufficient time and interest on SAC to set up a sub-committee to address some of the issues that have been raised.

Alberta Conservation Strategy

A number of individuals from SAC have provided a great deal of input into the preparation of sector reports for the Alberta Conservation Strategy. In particular, the work of Ms. Louise Horstman should be acknowledged in this regard.

Water Issues

A standing sub-committee of SAC continues to deal with a number of water issues. The Report and Recommendations on Water Management in the South Saskatchewan River Basin and Alberta's response to the Pearse Commission are currently under review by the water sub-committee.

Alberta Agriculture's "Pride in Alberta"

A request was received from the Rural Environment Sub-Committee for review of some educational materials for grades 4, 5, and 6. Comments were provided by several members of SAC.

Reserves for Nature

Several reviews of a paper on the subject of ecological reserves written by Cal Webb, ECA Research Officer, were provided by SAC to the ECA research staff. This paper was prepared as background material for some sectoral papers dealing with ecological reserves in the Alberta Conservation Strategy.

Hazardous Chemicals Act Advisory Committee

Dr. Bob Rogers continued to serve on the Hazardous Chemicals Act Advisory Committee as a rep-

resentative of SAC. SAC would like to acknowledge the service he has provided in this capacity.

ECA Report and Recommendations on Recycling

Several members of SAC are in the process of reviewing the Recycling Report and will provide comments to the ECA.

In 1988, SAC will need to spend some time evaluating its effectiveness. In particular, SAC should review its executive committee and sub-committee structures and determine whether these are the most efficient ways of utilizing the resources of its members.

Finally, the effective functioning of the Science Advisory Committee depends on the willingness of busy professionals to make time for providing thoughtful review of materials and giving advice on the setting of policy with respect to the environment. Many SAC members and members of the scientific community in Alberta are extremely busy, and yet have given of their professional and personal time and energy to accomplish the work of this Committee. For that I would like to thank them. I would also like to thank the administrative and research staff of the ECA for the assistance they have provided to SAC in the last two years, and to me as Chairperson.

Dr. Peter Mahaffy
Chairperson, Science Advisory Committee (January to May 1987)

Members of the Science Advisory Committee

Dr. Peter Mahaffy, Chairperson — Department of Chemistry, Kings College
Dr. C.F. Bentley — Department of Soil Science, University of Alberta
Dr. H. Buckmaster — Department of Physics, University of Calgary
Dr. S. Dalton — Concordia College
Dr. W.A. Fuller — Department of Zoology, University of Alberta
Ms. M. Haag — Department of Zoology, University of Alberta
Dr. J. Hackler — Department of Sociology, University of Alberta
Ms. L. Horstman — Canadian Society of Environmental Biologists
Dr. F. Kozar — Prairie Biological Research Ltd.
Dr. D. Kvill — Athabasca University
Dr. R.K. Lane — Environment Canada
Dr. W. Moser — Department of Botany, University of Alberta
Dr. R.P. Pharis — Department of Biology, University of Alberta
Dr. W. Phillips — Department of Rural Economy, University of Alberta
Dr. B. Rogers — Concordia College
Dr. R. Swanson — Canadian Forestry Service
Dr. D. Thompson — Faculty of Environmental Design, University of Calgary
Dr. W.H. VandenBorn — Department of Plant Science, University of Alberta
Dr. T.S. Veeman — Department of Economics, University of Alberta
Mr. W. Wishart
Dr. P. Woodard — Department of Forest Science, University of Alberta

Resource Persons for PAC Sub-Committees

Dr. P. Mahaffy, Chairperson
Dr. D. Thompson, Energy and Non-Renewable Resources Sub-Committee
Dr. T. Veeman, Environment Protection Sub-Committee
Dr. R. Lane, Pollution Sub-Committee
Dr. B. Fuller, Renewable Resources Sub-Committee
Dr. S. Dalton, Rural Environment Sub-Committee; and Environmental Education Advisory Committee
Dr. D. Kvill, Urban Environment Sub-Committee

4.4 ALBERTA CONSERVATION STRATEGY

4.4.1 HISTORY

The Alberta Conservation Strategy project was initiated by the Public Advisory Committee in 1985 with the purpose of preparing a draft strategy for Alberta. PAC unanimously passed a resolution at the 1985 Annual Joint Meeting that the ECA conduct public hearings based on the draft Alberta Conservation Strategy. Since that time, PAC has been a leader in Canada in the preparation of a

provincial strategy. The project is one of the first instances in Canada of a non-governmental body taking a proactive role in the formulation of a strategy for the sustainable use of resources.

The leadership shown by PAC and the ECA in developing a draft Strategy for Alberta has been recognized across Canada, and by many other nations. The process has been lengthy and difficult, but the goal remains to complete this phase of the Alberta Conservation Strategy project in mid-1988. A wider involvement of the people of Alberta can begin with the publication of a draft Strategy and various discussion papers about important environmental and economic sectors. One of the primary goals of the project from the beginning has been to motivate as many Albertans as possible to participate in the preparation and implementation of a Conservation Strategy for Alberta.

4.4.2 STRATEGIES IN CANADA DURING 1987

One of the most significant events of 1987 was the release of the report of the National Task Force on Environment and Economy. Seven Environment Ministers, including our own Hon. Ken Kowalski, and seven leaders of the business community in Canada joined with two nationally known environmentalists and a vice-president of the University of British Columbia to prepare a national report on the linkage of Canada's economic and environmental future.

An entire chapter of this report discussed and recommended that an interlocking system of conservation strategies in every province and territory as well as a national strategy be in place by 1992. Shortly after the release of this report, it was discussed and endorsed unanimously by the First Ministers at their November conference. This is the first time environmental issues have reached the agenda of a First Ministers conference. Prince Edward Island became the first province of Canada to publish a provincial conservation strategy. Their Strategy was later ratified in the legislature of PEI. A nation-wide report on conservation activity in Canada was published by the Canadian Society of Environmental Biologists, and articles were included on strategy development from every province and territory and at the national level.

4.4.3 PROGRESS IN ALBERTA

The Alberta Conservation Strategy project continued as the centerpiece of PAC activities during 1987. Development of the sectoral discussion papers occupied the Steering Committee and many PAC Sub-Committees throughout the year. At the Annual Joint Meeting, the Hon. Ken Kowalski urged PAC to complete the project and move on to the next phase. It is his wish that a final Conservation Strategy be completed well before the 1992 target set by the National Task Force.

Work on the strategy project in Alberta during 1987 was largely of the quiet, grind-it-out variety that makes few startling breakthroughs or headlines. Steady progress was made toward our goals. Many hundreds, if not thousands, of volunteer hours were spent writing, reading, reviewing, rewriting, debating, and rewriting again. Planning, organization, and co-ordination of the project kept the Steering Committee hopping throughout the year.

The Urban Environment Sub-Committee devoted several of its meetings to the preparation of an urban discussion paper for the Strategy. Workshops were held, invited guests conducted panel discussions, and several versions of the discussion paper were reviewed by the Sub-Committee. As a result of their efforts, and with much helpful advice from individuals at Alberta Municipal Affairs, the urban discussion paper is scheduled to go to editing in early 1988.

Several other sub-committees allocated one or more meetings to the preparation of discussion papers for the strategy project. Workshops or other activities concerning the Strategy were held by the Energy and Non-Renewable Resources Sub-Committee, the Environment Protection Sub-Committee, the Rural Environment Sub-Committee, the Renewable Resources Sub-Committee, and the

Environmental Education Advisory Committee. During the latter half of 1987 more resources were made available by the ECA for work on the Conservation Strategy project. The project should enter the home stretch in early 1988 and an all-out effort will be necessary to complete our tasks in a timely manner. Great enthusiasm has been generated during the course of this project, and we are all looking forward to a successful conclusion to our work.

Eleven discussion papers are now in relatively good shape and are expected to be completed in the first half of 1988. The sequence of initial publications is expected to be *Reserves for Nature, Resolving Conflict: A Case Study*, the Urban Environment, Agriculture, and Alternative Energy Sources. All the others are in a tight race to reach the editor's desk.

Work on the draft Strategy itself will probably not begin until late winter, with a target date for completion sometime in early summer. Several reviews will be required during the spring to ensure the best possible start is given to the Alberta Conservation Strategy. Expectations of the Steering Committee and all the many volunteers who have given so generously of their time and skill, are for 1988 to be even busier than 1987, but with the added attraction of seeing efforts finally pay off.

4.4.4 ALBERTA CONSERVATION STRATEGY STEERING COMMITTEE

Report from the Chairperson — Dr. Joan Snyder

In many respects, 1987 has seen the Conservation Strategy project assume a little lower public profile in Alberta — like Ogopogo or Nessie ducking below the surface, yet sending up air bubbles all across the lake to remind observers that there is something big moving along down there. The end of this year brings us to the next phase of the project with a great deal of hard work now paying off as we expect to see the publication of a number of discussion papers early next year. We're getting ready to sprint the last few yards now, and are quite optimistic that our goal of a draft Conservation Strategy will be achieved by the middle of 1988.

Demand for the *Prospectus* meant that the document had to be reprinted in the spring of 1987. At the same time, it was updated to reflect events and decisions about the direction of the project that had occurred since the first printing. Nearly 1,000 copies of the *Prospectus* have been distributed this year, bringing the total to almost 3,300. The information kit remains a popular item, and the mailing list continues to grow. The Steering Committee held five meetings in 1987, including one joint meeting with the Co-ordinating Committee in March.

The Steering Committee experienced a great deal of vicarious satisfaction in 1987. The report of the U.N. Commission on Environment and Development (the Brundtland Commission), to which we made a submission, was released in the spring to world-wide acclaim. In September, the Task Force on Environment and Economy, sponsored by the Canadian Council of Resource and Environment Ministers (CCREM), released its watershed report. One of the key Task Force recommendations from our perspective was that every province and territory should have a conservation strategy in place by 1992. This recommendation should provide a great incentive to all jurisdictions to launch strategy initiatives of their own, with potential for a major role for non-government organizations.

The Task Force had high-level representation from government and industry as well as from academia and non-government organizations. Its report has established Canada as a world leader in recognizing and trying to come to grips with the difficulties of sustainable development. The public high point of this endeavor occurred when Canada participated in the United Nations debate on the Brundtland report. Of particular satisfaction to the Steering Committee was the naming of Mike Kelly from the ECA as a non-government member of the Task Force Secretariat. Mike's experience and insight was undoubtedly very valuable to the Secretariat; now it is our turn to draw on his new

experiences and knowledge from this body to help our own project in Alberta.

Observing the progress being made across Canada has also been gratifying. Prince Edward Island was the first jurisdiction to have its Conservation Strategy approved by the Provincial Legislature, and both the Yukon and Northwest Territories are well on their way to territorial strategies. The excitement that has been part of our work in Alberta is appearing across the country as industry, government, and non-government groups alike discover the potential held by the World Conservation Strategy and its implications for their corner of the planet.

To provide encouragement and support for strategy initiatives in Canada, a major conference on sustainable development is being plannned for 1990; this will provide an opportunity for Conservation Strategy leaders to discuss and share their efforts to date. The spotlight might again be on our country in 1992, as Canada has offered to host the international follow-up conference to the 1972 Stockholm conference.

Members of the Steering Committee continued to work hard on their own sectors this year, as well as participating in the activities of their respective sub-committees. Many of our members also belong to groups other than PAC that are interested in and supportive of conservation strategy goals and objectives. We hope the exchange of ideas and perspectives that is possible through such interaction will continue and that the support of such groups will grow. Although it has not received a lot of public attention, this behind-the-scenes work is essential to the preparation of a conservation strategy that will be realistic and workable.

A lot of this year's progress on the Albe ta Conservation Strategy project has occurred in the various PAC sub-committees. All sub-committees as well as EEAC and SAC have helped to advance the project in 1987, by hosting workshops, reviewing draft material, or inviting pertinent guest speakers. Government, industry, and other non-government agency response to and participation in these meetings and discussions has been positive and supportive. The Steering Committee continues to have representation from all of the PAC committees and the liaison and co-operation have been tremendous. The support of ECA staff for our work is also very much appreciated as we look forward to another productive year.

1987 has been a bit of a "test" year for the Conservation Strategy Steering Committee and others involved in this work; despite budget cutbacks and the incredible demands on volunteer time, we made considerable progress and plan to see the project through to the completion of a draft Strategy for Alberta. We have learned a lot about ourselves and our priorities this year, and we are even more convinced that this project will have a lasting effect on the way we do business in Alberta. There are several major events coming up in the next few years. These can serve as goals to work toward, and they will provide opportunities for us to share experiences with others in the search for better ways to integrate the needs of conservation and development. All of PAC should be proud of what has been accomplished to date, but this is, we hope, just the end of the beginning.

Dr. Joan Snyder
Chairperson, Alberta Conservation Strategy Steering Committee

Members of the Alberta Conservation Strategy Steering Committee

Mr. W.A. (Bill) Flook
Dr. J. Godfrey
Ms. H. Heacock
Ms. S. Henderson
Ms. L. Horstman
Mrs. B. Hunter
Mr. E. Kure
Ms. S. Nelson Pier
Mrs. B. Paschen
Mrs. M. Posey
Mr. R.M. (Bob) Richardson
Mrs. M. Stephenson
Mr. D. Stoker
Dr. G. Swinnerton
Ms. R. Usher
Mrs. P. Wight

4.5 ANNUAL JOINT MEETING

4.5.1 LOCATION AND ATTENDANCE

In keeping with fiscal restraint, the Annual Joint Meeting was again held in Edmonton. The meeting

took place on December 4 and 5 and was well attended, with over 100 participants.

4.5.2 PROGRAM

The theme of the 1987 Annual Joint Meeting was Communications. This topic was selected as members recognized its importance to the success of the conservation strategy project.

Proceedings of the conference will be assembled as an ECA publication for use by organizations that are concerned with communications, a most important element of their operation.

4.5.3 NEW OFFICERS

Mrs. Jean Sloan was acclaimed chairperson of the Co-ordinating Committee for 1988. She succeeds Ms. Maryhelen Posey, who now assumes the duties of past chairperson. Mr. Lochan Bakshi was acclaimed vice-chairperson for the coming year. Among his duties will be heading the Annual Joint Planning Committee for 1988.

4.5.5 RESOLUTIONS

Four resolutions were presented to and unanimously approved by the plenary session of the Annual Joint Meeting. Following is the text of these resolutions:

Resolution One

I. Recycling of Waste

II. Be It Resolved:

THAT the Government of Alberta take immediate steps to begin implementing the recommendations of the Environment Council of Alberta on Recycling of Waste in Alberta.

III. Background:

At the time of presentation of the recycling report to the Government, the Minister of the Environment indicated that he was in agreement with these recommendations at least in principle.

It seems appropriate that by this time the public should be given some evidence of his intention to implement these recommendations.

IV. References:

Environment Council of Alberta. 1987. *Recycling of Waste in Alberta: Report and Recommendations.* Available as Technical Report or Summary Report.

V. To Be Directed To:

Premier
Minister of the Environment

VI. Proposed by the Co-ordinating Committee

Resolution Two

I. Sewage Effluent Irrigation

II. Be It Resolved:

THAT the Government of Alberta undertake a comprehensive investigation of the implementation of sewage effluent irrigation, including options of total, partial or part-year irrigation.

III. Background:

The Alberta Water Resources Commission recognized the problem with the current method of sewage effluent disposal and recommended "that the potential for disposing of effluents on land in an irrigation process receive comprehensive investigation, supported by the Province, to more clearly define whether such disposal processes are reasonable and can be used, instead of discharging into streams."

Sewage is a valuable resource. The organic matter and nutrients in sewage should be recycled. Conventional sewage treatment and disposal not only wastes this valuable resource, but it decreases the water quality of the receiving waterbodies. Thus, utilization of sewage effluent serves two purposes: valuable nutrients are recycled and water quality is improved.

Currently, the major impact on water quality in Alberta is from municipal sewage disposal. All

of the rivers downstream from the major urban centers fail to meet the objectives for surface water quality.

The cost of drinking water treatment of communities is increased because of the disposal of sewage effluent in the rivers by communities located upstream. In addition, many people living below these urban centers utilize untreated water for themselves and their livestock. There are undoubtedly increased health costs associated with our current method of sewage effluent disposal.

IV. References:

Alberta Water Resources Commission. 1986. *Water Management in the South Saskatchewan River Basin: Report and Recommendations*. See page 24.

Previous PAC Resolutions (available from the ECA Library)

Sewage Effluent and Sludge from Urban Centres (1978)

Sewage from Calgary and Edmonton (1979)

Land Application of Sewage Effluents (1980)

Utilization of Sewage Effluent (1981)

V. To Be Directed To:

Minister of the Environment
Minister of Agriculture
Minister of Municipal Affairs
Minister of Community and Occupational Health
City of Calgary
City of Edmonton
City of Lethbridge
City of Medicine Hat
City of Red Deer
City of Grande Prairie
City of Fort McMurray

VI. Proposed by the Pollution Sub-Committee

Resolution Three

I. Disposal of Used Pesticide Containers

II. Be It Resolved:

THAT all used pesticide containers that cannot presently be recycled be accepted for disposal by the Alberta Special Waste Management Corporation at the Swan Hills Special Waste Treatment Plant.

III. Background:

Over 90 percent of present pesticide containers are plastic and not recyclable.

In a letter dated August 7, 1987, and in *Hansard* May 29, 1987, Ken Kowalski, Minister of the Environment, has stated that pesticide containers should not be landfilled.

Cases of indiscriminate dumping and burning of pesticide containers have occurred at Drumheller on March 21, 1987 and near Stettler on April 29, 1987.

Municipal authorities are reluctant to accept pesticide containers into their landfills due to obvious potential environmental and health risks and their associated liabilities.

The provincial government has taken steps toward a long-term solution to the disposal of used plastic pesticide containers by funding a study of the feasibility of recycling them. (Alberta Environment press release, September 24, 1987).

As well, the Environment Council of Alberta's Panel on Recycling has recommended banning all pesticide containers that are not safely and economically recyclable (Report and Recommendations on Recycling, Recommendation 22).

Either action will require time to generate results. In the interim, a safe method is required to properly dispose of plastic pesticide containers.

IV. References:

Alberta Environment News Release, dated September 24, 1987, "Recycling of Pesticide Containers to be Studied." Available from the ECA Library.

Alberta Hansard, May 29, 1987. See page 1503.

Environment Council of Alberta. 1987. *Recycling of Waste in Alberta: Report and Recommendations*. Available as Technical or Summary Report.

Letter from Hon. Ken Kowalski to Mr. J. Hoveland, Board Chairman, Alberta East Central Health Unit No. 10, Stettler, Alberta, dated August 7, 1987. Available from the PAC Secretariat.

V. To Be Directed To:

Minister of the Environment

Minister of Community and Occupational Health

VI. Proposed by the Pollution Sub-Committee

Resolution Four

I. Reclamation of Abandoned Industrial Sites

II. Be It Resolved:

THAT reclamation guidelines and standards be established for abandoned industrial sites.

III. Background:

In order to protect the environment and to provide for all potential future uses, it is important that abandoned industrial sites are properly reclaimed. This can be facilitated by achieving a clear understanding of reclamation requirements and formalizing this through legislation.

In order to ensure a broad understanding of reclamation requirements, the guidelines and standards should be developed through a process which involves joint participation of industrial, governmental, and environmental groups.

Existing provincial environmental legislation provides for regulating industrial site reclamation. The legislation should be used to create guidelines and standards by September, 1988. This timing is appropriate, as information which is needed to accomplish this has been under development since early 1986, according to a letter written by the Minister of Environment.

IV. References:

Letter from Hon. Ken Kowalski, Minister of Environment, to Dr. Martha Kostuch, dated January 21, 1986. Available from the PAC Secretariat.

V. To Be Directed To:

Minister of the Environment

VI. Proposed by the Pollution Sub-Committee

4.6 RESPONSES TO 1986 RESOLUTIONS

Responses of the various government departments to the 1986 Resolutions were again consolidated by the office of the Minister of Environment. These responses were forwarded to the Council in March 1987 and passed to the Co-ordinating Committee and originating sub-committees for follow-up as appropriate. The complete text of the responses as received from the Minister is printed below:

Resolution One — The South Castle River Valley

The departments of Forestry, Lands and Wildlife, and Recreation and Parks are working co-operatively in providing for the recreational and tourism needs of Albertans in this area of the province. The establishment of wildland recreation facilities will be accomplished as a co-operative venture between these government agencies.

It will be important to maintain the wildland character of the South Castle River for extensive recreation, while maximizing the intensive development potential at West Castle, Beaver Mines, and surrounding residential subdivisions further north. If properly developed, additional private sector recreation opportunities, such as equipment rentals, may also become viable.

The South Castle River Sub-Regional Integrated Resource Plan, approved by the Alberta Cabinet in June, 1985, provides a sound framework for the perpetuation of wildland recreation values in the South Castle area. The creation of a wildland provincial park is not contemplated at this time since the South Castle's recreational amenities are safeguarded by the Integrated Resource Plan.

Resolution Two — Utilization of Natural Gas as a Byproduct of Water Well Drilling

Although this resolution has merit, the Energy Resources Conservation Board, as the agency responsible for the standards and procedures involved in natural gas production, would have to be

consulted prior to such a scheme being approved. Among other things, it would have to be demonstrated that the natural gas produced complied with industry standards for domestic gas quality.

It should be cautioned that the resolution may conflict to some extent with the provision in the Rural Gas Regulations which grants to a distributor holding a rural gas franchise the exclusive rights to provide gas service to farmers for domestic and general agricultural purposes. However, the use of natural gas as a byproduct of water wells is not expected to be widespread, and therefore, the exclusions as defined in the regulations could probably be negotiated with the affected gas distributor.

Resolution Three — Water Development Projects

Currently Alberta Environment performs the following major functions in the managment of the province's water resources:

1) hydrological information data gathering, compiling, and anlyzing to provide an inventory of water resources and a flow forecasting capability;

2) water allocation, licensing, and administration of the Water Resources Act;

3) provision of planning, including environmental, economic, social engineering and administrative services for the implementation of water development and control projects;

4) operation and maintenance of infrastructure to control the flow and distribution of water to various users and interests;

5) control and regulation of the flow of water across interprovincial and international boundaries in accordance with existing apportionment agreements or liaise with other jurisdictions where apportionment agreements currently do not exist;

6) administers the Department of Environment Act and the Clean Water Act; develops standards, review, approval and licensing of municipal water, sewage and stormwater projects;

7) monitors the quality of surface water, municipal and industrial waste discharges;

8) provides an inventory of groundwater resources in terms of quantity, quality and availability;

9) develops and maintains an environmental impact assessment system and reviews EIA's on major development projects.

The separation or removal of water resources development from the overall role and mandate of Alberta Environment cannot easily be achieved. This role, within the context of the total function of government, is to promote a balance between resource management, environmental protection and the quality of life.

The further role and objectives of departmental water resources management is to ensure that the multi-purpose water needs of Albertans are met and to solve water related problems; to manage water so that a supply of good quality water is not a limiting factor in achieving the overall economic and social objectives of the province, to promote the orderly development of water resources; to prevent supply shortages, water pollution and user conflicts and to administer the Water Resources Act.

Management of the province's water resources is often very complex and technical in nature. Separating the responsibility for water development from the other functions listed above would in effect, reduce the potential for providing that multi-purpose water needs of Albertans are met. These needs can in part be met by providing water storage and distribution systems due to the extreme variability in natural stream flows. Storage affects downstream water quality as well as quantity and therefore all possible effects must be carefully evaluated in the planning and design stages of water development projects. This can best be coordinated and achieved when all water manage-

ment related functions are integrated and the responsibility of one government department.

In 1984 the Alberta Water Resources Commission held extensive public hearings on water management in the South Saskatchewan River Basin. The commission's report, released in 1986, concluded that the very close association of water quantity management should be maintained. Further recommendations were that the Province should continue to be responsible for the development and operation of headworks systems and maintain a strong and resourceful department, with the flexibility to adjust practices as necessary to effectively manage increasingly complex water supply and demand requirements.

Therefore, under the present circumstances, the removal of water development from the overall water management responsibility of the Department of the Environment will not be considered.

Resolution Four — Indoor Air Quality

The Department of Community and Occupational Health is responsible for monitoring indoor air pollutants in public and residential buildings, and for enforcing indoor air quality standards in public buildings. An official of Community and Occupational Health represented the province on the joint Federal/Provincial Committee on Indoor Air Quality, which developed standards for 17 air contaminants. When the standards are published, it is the government's intent to use them as a guideline for monitoring and evaluating indoor air quality in public buildings.

The need for specific legislation may be considered in due course. In the meantime, a committee has been formed on indoor air quality consisting of various health units throughout the province and the Department of Community and Occupational Health. This committee is currently developing a program to investigate and evaluate public health concerns of indoor air quality as it relates to public and residential buildings.

4.7 PUBLIC COMMUNICATIONS

The Public Advisory Committees maintain continuous and strong communications links with the government and members of the legislature, as well as with the members of its advisory and subcommittees and the general public. Letters, meetings with various ministers, and distribution of advisory committee meeting minutes are among the more regular forms of communication used. However, from time to time news releases on topics of wider interest or importance are produced (see Appendix D). These, along with material prepared for a regular PAC members' newsletter (PAC NOTES), are also made available as a service to the editors of the various newsletters published by organizations who have representatives nominated to PAC.

5. OTHER ACTIVITIES OF THE ENVIRONMENT COUNCIL

5.1 CANADIAN ENVIRONMENTAL ADVISORY COUNCILS

The 11th Assembly of the Canadian Environmental Advisory Council was hosted by Ontario, October 22 and 23, 1987. Mr. Alistair Crerar, Chief Executive Officer, Mr. David Buchwald, Director of Research and Mr. Archie Landals, Director of Liaison represented the Environment Council of Alberta.

This year's conference dealt with issues on Environment and Economy. The following statement was issued by the 11th Assembly:

> The Environmental Advisory Councils of Alberta, New Bruswick, Nova Scotia, Prince Edward Island, Quebec, Ontario, and Canada in assembly at Toronto on October 23, 1987 unanimously endorsed the recommendation of the Report of the National Task Force on Environment and Economy that:
>
> The First Ministers must assume an overall leadership role and demonstrate a commitment to environment-economy integration by:
>
> Directing that cabinet documents and major government economic development documents demonstrate that they are economically and environmentally sound and therefore sustainable.
>
> Discussing environment-economy integration at First Ministers' Conferences.
>
> Ensuring that all levels and departments of government establish consultation processes which encourage and facilitate public involvement and influence in policy making and planning processes
>
> Establishing formal mechanisms to hold Ministers and their departments accountable for promoting environmentally sound economic development.
>
> Developing an environmental code of ethics and principles, including principles of prior notification and consultation, which will provide guidance on the management of environmental matters among governments in Canada.

5.2 ALBERTA ENVIRONMENT AWARDS COMMITTEE

Dr. Sheri Dalton and Mr. Rick Mrazek represented the interests of the Advisory Committees on the Alberta Environment Awards Committee.

The Advisory Committees expressed their appreciation and support to the Hon. Ken Kowalski and look forward to the future success of this endeavor.

Winners of the first annual Alberta Environment Awards, in June 1987, included Shell Canada Ltd. for its Moose Mountain Pipeline project, an example of good design for minimum permanent environmental impact; Society, Environment and Energy Development Studies (SEEDS) Foundation for its leadership in environmental education; and Dan Stoker, a freelance writer and environmental educator whose dedication to environmental education in Alberta over the past decade has become legendary. Dan is a mem-

ber of the Environmental Education Advisory Committee, of which he is the past chair.

5.3 ENVIRONMENT WEEK ASSOCIATION

Report from the PAC Representative — Dr. Sheri Dalton

I replaced Dr. Lubomir Wojtiw as the Environment Council of Alberta's representative on the Board of Directors in September, 1986. I would like to thank Lubomir for the nomination to the Board, as I have found the work to be of great interest and the results extremely worthwhile.

Environment Week '87 has been an unqualified success in Alberta, thanks in large part to all the supporting organizations. The Environment Council of Alberta has participated in several activities, including a listing of activities province-wide on its Bulletin Board, provision of an Environment Poster Display to Calgary City Hall and provision of a Recycling Display in the Legislative Pedway and in Churchill Square. The ECA also assisted several members of its Pollution Sub-Committee in attending the Toxics Conference in Lethbridge, distributed Environment Week news to all of its 128 members, and provided representation to this Board as well as to members of the Alberta Environment Awards Selection Committee. The ECA is very pleased with the 1987 Environment Week celebration in the province, and hopes to participate in the future.

Concordia College, where I work, has also participated in Environment Week by distributing Environment Week News, and placing an article on Environment Week in its publication, the Concordian. We have also used the impetus provided by the week's activities to plan for our first campus paper recycling project.

It must be acknowledged that the success of this week is due primarily to the leadership of Jim Martin. He has provided the drive to bring the week to a successful conclusion, and to strive for an even greater celebration next year, and he deserves the thanks and congratulations of everyone concerned with the environment in this province. Thanks should also go to Janet Austin and Debbie Griff, who, as chair of the Communication and Program Committees respectively, have contributed so capably and so far beyond the "call of duty."

Looking forward to Environment Week '88.

5.4 COMPUTER BULLETIN BOARD

Since October 3, 1986 the Environment Council has been operating a computerized bulletin board. During 1986, and until the spring of 1987 it was operated only outside of office hours, during evenings and weekends. On May 22, 1987 it was upgraded to a 24-hour-a-day, seven-days-a-week operation. It is available toll free in the Edmonton area. Other users are required to pay long distance charges to connect to the service.

Despite this barrier, calls have been received from as far away as California, British Columbia, and Quebec. There are now 992 users of the system.

These users made 2,728 calls in 1987, representing 560 hours of on-line time. This volume of calls and amount of on-line time represents a susbstantial amount of information provided to the public about environmental matters, with only minimal involvement of Council staff and the use of equipment that is part of normal office furnishings. It represents a very cost-effective method of making information available to the public.

The bulletin board can be accessed by anyone who has a computer and a modem. The phone number is 438-5793, and technical specifications include: 300 or 1200 baud, parity = none, 8 data bits and 1 stop bit.

The bulletin board is organized into several sections.

Bulletins — This section has information on upcoming environmental events, editorials, descriptions of the ECA and its Public Advisory Committees, toll free numbers for environmental

information, and upcoming agendas for Public Advisory Committee meetings.

Message System — This part of the board provides for an exchange of information on any environmental matter of interest to users. Callers have used the system to obtain information from the ECA or to share information with each other. At the end of 1987 there were over 200 messages conveyed on this part of the system.

Conferences — This is a special application of the message system. In a conference information is exchanged on a focused topic area. For example, there was a conference on the ethics of hunting and fishing with 34 messages on all aspects of this topic.

Files — Files can be copied from the board or supplied to it. There are many files available to users such as discussion papers relating to conferences, bibliographies, publication lists, locations of ECA information centers, press releases, descriptions of environmental resources, and a small amount of software. This part of the board is used extensively — there were 705 downloads from the board, and 59 uploads to the board in 1987.

5.5 ENVIRONMENTAL POSTER COLLECTION

The Environment Council of Alberta has developed a poster collection featuring environmental and conservation topics from around the world. The objective of the collection is to demonstrate the atmosphere of communal purpose which is reflected in a globally shared concern for the environment. Many of the posters we have received from around the world convey their messages with outstanding verve, while generating strong emotional impact through their aesthetic successes. This reflects well upon the countries from which the posters were obtained. These works represent the concerns, as well as the talents, with which agencies throughout the world attempt to communicate the need to protect our globally shared environment.

Through our poster collection we are sharing these concerns with Albertans and our visitors. A number of posters are always on display in the offices of the Environment Council. These generate considerable interest from members of the Public Advisory Committees as well as other members of the public. During the past year the Council provided posters for feature displays at Calgary City Hall, the Provincial Museum of Alberta, the Nature Centre in Red Deer and to the Edmonton Board of Health for a conference they sponsored.

In addition, a display of recycling posters was set up in the Legislative Pedway to coincide with the release of the report and recommendations from the public hearings on recycling in Alberta

Posters for feature displays may be borrowed from the Council's library.

5.6 WATER RESOURCES TELECOURSE

The Environment Council continued to provide assistance to ACCESS Network in their endeavor to produce a water resources telecourse. As a member of their "advisory committee" we have reviewed drafts, suggested contacts, and assisted with material and examples where possible. A detailed proposal, *The Living Flow*, has been broadly circulated to potentially interested organizations. The Council appreciates the opportunity to participate in environmental education activities of this nature.

5.7 CO-OPERATIVE ASSISTANCE

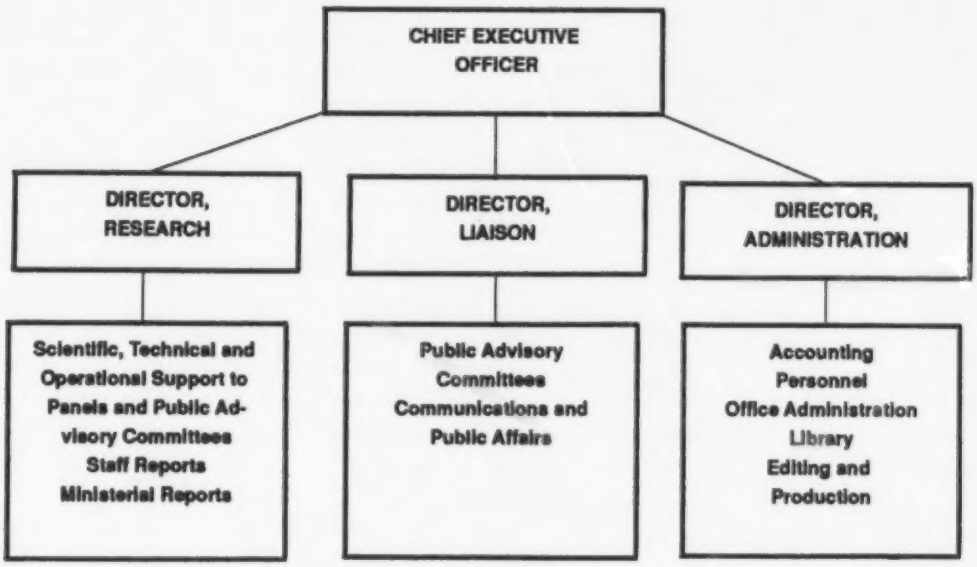
From time to time, the ECA is called upon to assist other organizations with some aspect of a public event they are organizing or sponsoring. During Environment Week in 1987, ECA staff presented a display on recycling at the Environment in the Park event June 6 at Rundle Park in Edmonton. As well, on June 4 and 5, ECA staff members acted as facilitators at the southern Alberta Environmental Group's Toxics Conference, which was held at the University of Lethbridge.

6. ADMINISTRATION

The Administration Division is responsible for providing services to the Environment Council in the areas of accounting, budgeting, editing, library, messenger, office management, personnel, print procurement, and purchasing.

The Council occupies the 8th floor, Weber Centre, 5555 Calgary Trail Southbound N.W., Edmonton.

6.1 ORGANIZATION OF THE ENVIRONMENT COUNCIL



1. CHIEF EXECUTIVE OFFICER — Exercises the power of the Council and performs the duties and functions of the Council, and is a member and Vice-Chairman of panels constituted by the Lieutenant-Governor in Council.

2. DIRECTOR, RESEARCH — Directs research officers and is responsible for the scientific activities of the council.

3. DIRECTOR, LIAISON — Directs assistance to the Public Advisory Committees; responsible for communications, public relations, and public affairs.

4. DIRECTOR, ADMINISTRATION — Directs and supervises the administrative systems — financial, accounting, personnel, editing, and report production functions.

6.2 FISCAL REPORT

Funds for the operation of the Environment Council are provided under the Minister of Environment's Vote 8 — Overview and Co-ordination of Environment Conservation. These funds are transferred to the Council from the Department of Treasury on a monthly basis, and with the exception of salaries, are deposited in the Council's bank account at the main branch of the Canadian Imperial Bank of Commerce, Edmonton. Cheques are issued directly by the Council for payment of all accounts. During 1987, a total of 768 cheques were issued.

With the operation of its own bank account, the Council operates at arm's length from the Alberta Government; however, the financial statements are audited by the Office of the Auditor General. The statements as of March 31, 1987 follow.

Auditor General's Report

ALBERTA LEGISLATURE

OFFICE OF THE AUDITOR GENERAL

To the Chief Executive Officer of the
Environment Council of Alberta

I have examined the balance sheet of the Environment Council of Alberta as at March 31, 1987 and the statements of revenue, expenditure and unexpended funds and equity in fixed assets for the year then ended. My examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as I considered necessary in the circumstances.

In my opinion, these financial statements present fairly the financial position of the Council as at March 31, 1987 and the results of its operations for the year then ended in accordance with the disclosed basis of accounting, considered appropriate in the circumstances, as described in Note 2 to the financial statements applied on a basis consistent with that of the preceding year.

Donald D. Salmon

Donald D. Salmon
C.A.
Auditor General
Edmonton, Alberta
August 28, 1987

BALANCE SHEET AS AT MARCH 31, 1987

	1987	1986
ASSETS		
Current		
Cash	$336,402	$243,880
Contributions receivable, Province of Alberta		117,000
Prepaid expenses	7,619	6,707
	344,021	367,587
Fixed		
Office equipment, at cost	142,207	125,819
Less: Accumulated depreciation	119,543	98,166
	22,664	27,653
	$366,685	$395,240
LIABILITIES AND EQUITY		
Current		
Accounts payable	$6,927	$26,124
Equity		
Equity in fixed assets	22,664	27,653
Unexpended funds	337,094	341,463
	359,758	369,116
	$366,685	$395,240

The accompanying notes are part of these financial statements.

STATEMENT OF REVENUE, EXPENDITURE AND UNEXPENDED FUNDS FOR THE YEAR ENDED MARCH 31, 1987

	1987	1986
REVENUE		
Contributions by the Province of Alberta, General Revenue Fund	$1,236,591	$1,174,721
EXPENDITURE		
Salaries	706,906	682,217
Travelling	190,166	137,116
Fees and commissions	88,633	20,024
Employee benefits	80,119	77,282
Printing	34,029	46,892
Equipment rental	32,787	17,805
Office supplies and postage	32,742	29,265
Advertising	24,096	13,141
Equipment purchases	16,388	13,132
Equipment maintenance	16,273	12,413
Library	7,473	7,841
Hall rentals	6,126	874
Telephone	4,785	3,844
Miscellaneous	437	13
	1,240,960	1,061,859
Excess of revenue over expenditure	(4,369)	112,862
Unexpended funds at beginning of year	341,463	228,601
Unexpended funds at end of year	$337,094	$341,463

STATEMENT OF EQUITY IN FIXED ASSETS FOR THE YEAR ENDED MARCH 31, 1987

	1987	1986
Balance at beginning of year	$27,653	$35,195
Add: Office equipment purchased from operations	16,388	13,132
	44,041	48,327
Less: Depreciation for the year	21,377	20,674
Balance at end of year	$22,664	$27,653

NOTES TO THE FINANCIAL STATEMENTS MARCH 31, 1987

Note 1 Authority

The Environment Council of Alberta operates under the authority of the Environment Council Act, Chapter E-13, Revised Statutes of Alberta 1980.

Note 2 Significant Accounting Policies and Reporting Practices

These financial statements have been prepared in accordance with generally accepted accounting principles except that fixed

assets are charged to expenditure at date of acquisition. The fixed assets are also shown on the balance sheet at original cost less accumulated depreciation, with a corresponding credit to equity in fixed assets. Depreciation is charged to equity in fixed assets.

Depreciation is provided over the estimated useful life of the assets on the straight-line method at a rate of 33 1/3% for computer equipment and software and 10% for the remaining office equipment.

A statement of changes in financial position is not provided as disclosure in these financial statements is considered to be adequate.

Note 3 Administration Expenses

Office furniture and accommodation are provided to the Council at no cost by the Province of Alberta, General Revenue Fund and accordingly are not reflected in these financial statements.

Note 4 Comparative Figures

The 1986 figures have been reclassified where necessary to conform to 1987 presentation.

Note 5 Approval of Financial Statements

These financial statements were approved by management.

***

6.3 PERSONNEL

The Council has 20 permanent salaried positions.

All permanent salaried positions are under the purview of the Public Service Commissioner and the regulations issued by the Personnel Administration Office are applicable. Non-management and non-excluded staff are members of the Alberta Union of Provincial Employees.

During 1987, the Council expanded its policy of restricting smoking in some areas by introducing a total ban on smoking to make the Council a Smoke Free Worksite.

6.4 LIBRARY SERVICES

The responsibilities of the ECA Library are:

1) to provide information and background material to support projects of the Council and its research staff;

2) to provide a source of environmental information for the general public;

3) to manage and distribute all Environment Council publications.

The Library contains 7,446 books and government documents and subscribes to 82 periodicals and two newspapers. The collection also includes an extensive file of newspaper clippings on environmental matters, maps, and a selection of general reference material. Approximately half of the Library's card catalogue, or 4,332 records, has been entered into a computer data base.

6.4.1 SERVICES TO THE ECA STAFF

Loans to Council staff (excluding periodicals):	208
Periodical loans to Council staff:	214
Reference questions answered:	435
Material borrowed from other libraries (interlibrary loans):	360

6.4.2 SERVICES TO THE PUBLIC

Inquiries received by phone, letter, or personal visits:	1,404
Interlibrary loans to the public and other agencies:	30
Loans of audiovisual material:	5

6.4.3 PUBLICATIONS

During the year, the Library was responsible for

the distribution of a large number of publications and brochures.

Recycling of Waste in Alberta: Technical Report and Recommendations	2,055
Recycling of Waste in Alberta: Summary Report and Recommendations	3,922
Annual Report 1986	1,079
CEAC Proceedings	466
Report of the National Task Force on Environment and Economy	500
Miscellaneous Publications	2,656
Total distributed	10,678

A complete list of Environment Council publications is appended to this report (Appendix B).

The ECA mailing list was revised and updated throughout the year, and consisted of the following:

General list	1,716
Recycling list	1,893
Conservation Strategy list	1,185
Media list	475
PAC list	181
Total addresses at the end of 1987	5,450

Convenient local access to Environment Council information is available at a total of 44 depository libraries or Information Centers located throughout Alberta (see Appendix C). Transcripts of public hearings have a more limited distribution; these may be viewed at the locations marked with an asterisk in Appendix C.

6.4.4 INTERNATIONAL ENVIRONMENTAL POSTER COLLECTION

The Environment Council's collection of environmentally related posters are available for loan to libraries, schools and environmental exhibits. Two hundred and fifty-two posters have been catalogued into the library collection, and 139 went out on loan during 1987.

6.5 EDITING SERVICES

6.5.1 REPORTS PUBLISHED IN 1987

The major publications of 1987 were the final reports for the public hearings on recycling. The Recycling Panel's report and recommendations to government were produced in two formats — a short summary and a longer, more technical document. Both the summary and the technical report were produced on recycled stock, in keeping with the recommendations in the report.

The *Prospectus For An Alberta Conservation Strategy* was reprinted in April because of continuing demand.

6.5.2 REPORTS IN PREPARATION IN 1987

The first of the reports being prepared for the Alberta Conservation Stragegy project was ready for editing in the fall of 1987. *Reserves for Nature*, a look at the issues to consider in setting land aside for nature reserves, was completed and sent to the printer for delivery early in January of 1988. This report was the first product of our new desk-top publishing system.

6.6 OFFICE AUTOMATION

The Office Automation Committee met several times during the year. The Committee recommended the purchase of a desk-top publishing system to replace the antiquated IBM Mag Card Composer the Council has used to prepare camera-ready copy for printing since 1978. The new system was in place by fall, and was used immediately to produce a variety of materials. The system is based on the page layout software *Ventura Publisher*, an AT-style micro-computer, and a Postscript laser printer. This desk-top publishing system represents the culmination of the Office Automation Committee's original long-term plan. Beginning with the replacement of typewriters with

microcomputers for writing and revising, and carrying through to a system for complete in-house production of camera-ready copy for printing, the automation plan has resulted in a substantial decrease in total time required to produce documents. This system also allows more flexible formatting, resulting in improved quality for the Council's publications. This annual report is a sample of the output from the new system.

The Office Automation Committee also recommended the purchase of a memory-management software program that has enabled us to run our computer bulletin board 24 hours per day without dedicating a micro-computer to that task alone.

APPENDIX A.

PUBLIC ADVISORY COMMITTEE REPRESENTATIVES

(as of December 1987)

Public Advisory Committee on the Environment

Sponsoring Organizations and Representatives

Academic Women's Association ..... Ms. M. Turnell
Alberta Association of Architects ..... Mr. A.M. Holland
Alberta Association of Canadian Institute of Planners ..... Mr. S. Pragnell
Alberta Association of Landscape Architects . Mrs. L. Daniels
Alberta Association of Municipal Districts and Counties ..... Mr. G. Miller
Alberta Association of Registered Nurses ... Mrs. S. Henderson
Alberta Cancer Board ..... Mrs. G. Bako
Alberta Chiropractic Association ..... Dr. R. Gehrke
Alberta Conservation Tillage Society (ACTS) . Mrs. S. Nelson Pier
Alberta Federation of Labour ..... Mr. D. Moffat
Alberta Fish and Game Association ..... Mr. H. Fauser
Alberta Fish and Game Association ..... Mr. G. Merrick
Alberta Forest Products Association ..... Mr. A. Rytz
Alberta Institute of Agrologists ..... Mr. G. Shaw
Alberta Irrigation Projects Association ..... Mr. R. Jensen
Alberta Lung Association ..... Mrs. D.J. Lewoniuk
Alberta Medical Association ..... Dr. J. MacQuarrie
Alberta Pharmaceutical Association ..... Mrs. J. Roschlaub
Alberta Public Health Association ..... Mr. T. Hodge
Alberta Research Council ..... Dr. R.J. Fessenden
Alberta School Trustees Association ..... Mrs. M. Stephenson
Alberta Snowmobile Association ..... Ms. L. Sherren
Alberta Society of Professional Biologists ... Mr. M. Scott-Brown
Alberta Trappers' Central Association ..... Mr. N. Barber
Alberta Urban Municipalities Association ... Alderman C. Reid
Alberta Veterinary Medical Association .... Dr. A. Gerrow
Alberta Wheat Pool ..... Mr. H.R. Patching
Alberta Wilderness Association ..... Ms. J. McLean-Hayden
Alberta Women's Institutes ..... Mrs. H. Hallett
Alpine Club of Canada (The) ..... Mr. T. Code
Archaeological Society of Alberta ..... Mr. G.F. Paschen
Association of Professional Engineers, Geologists and Geophysicists of Alberta . Mr. J.E. Staples
Calgary Chamber of Commerce ..... Ms. J. Hodgson
Calgary Local Council of Women ..... Mrs. H. Heacock
Canada West Foundation ..... Dr. D.K. Elton
Canadian Association of Re-Refiners ..... Mr. R. Kalmacoff
Canadian Institute of Forestry ..... Mr. T. Williamson
Canadian Institute of Public Health Inspectors (Alberta Branch) ..... Mr. W. Irwin
Canadian Manufacturers' Association ..... Mr. A. Metcalfe
Canadian Meteorological and Oceanographic Society (Alberta Centre) ..... Dr. L. Wojtiw
Canadian Nature Federation ..... Mr. D. Stiles
Canadian Nature Federation ..... Ms. M. Posey
Canadian Parks and Wilderness Society (CPAWS) (Edmonton Chapter) ..... Dr. G. Swinnerton

(Calgary/Banff Chapter) ..... Ms. B. Beswick
Canadian Petroleum Association ..... Mr. B. Worbets
Canadian Petroleum Association ..... Mr. D.F. Porter
Canadian Society of Environmental Biologists
(Alberta Chapter) ..... Ms. R. Usher
Christian Farmers Federation ..... Mr. A. Kolk
Citizens for Public Justice ..... Mr. W. Koning
City of Airdrie ..... Mr. R. Davidson
City of Calgary ..... Ms. J. Lewin
City of Camrose ..... Dr. M. Muc
City of Drumheller ..... Mr. R. Romanetz
City of Edmonton ..... Mrs. P. Wight
City of Fort McMurray ..... Alderman B. Gendreau
City of Fort Saskatchewan ..... Alderman D. Petroski
City of Grande Prairie ..... Mr. E.G. Radbourne
City of Leduc ..... Alderman N. Hartfelder
City of Lethbridge ..... Alderman W.R. Cousins
City of Lloydminster ..... Alderman R. Summers-Gill
City of Medicine Hat ..... Mr. J. Hirsch
City of Red Deer ..... Alderman L. Pimm
City of St. Albert ..... Mr. D. Fraser
City of Wetaskiwin ..... Mr. N. Carlson
Coal Association of Canada ..... Mr. A. Kennedy
Cold Lake Community Advisory Committee . Mr. D. Appleby
Community Planning Association of Alberta . Ms. A. Parkinson
Consumers' Association of Canada ..... Mrs. E.S. Hunter
Consumers' Association of Canada ..... Mrs. M. Lutz
Council of Alberta Rural Ratepayers'
Associations ..... Mrs. A. Hendry
Dryland Salinity Control Association ..... Mr. W.M. Norris
Ducks Unlimited Canada ..... Mr. B. Calverley
Edmonton Chamber of Commerce ..... Mr. D. Mallon
Edmonton Local Council of Women ..... Ms. E.L. Butler
Electric Utility Planning Council ..... Mr. B. Peel
Energy Resources Conservation Board ..... Mr. H.O. Lillo
Entomological Society of Alberta ..... Mr. J.A. Shemanchuk
Federation of Alberta Naturalists ..... Mr. H. Gardner
Foothills Protective Association ..... Mr. C. Blackburn, Jr.
Fort Saskatchewan Regional Industrial
Association ..... Mr. M. Andresen
Health Unit Association of Alberta ..... Mr. H. Pharis
Heavy Crude Council ..... Mr. J. Aplin
Law Society of Alberta ..... Mr. D.R. Thomas
Lloydminster Chamber of Commerce ..... Mrs. J. Sloan
Northwestern Fishing Co-op ..... Mr. S. Linington
Save Tomorrow Oppose Pollution (STOP) ... Mr. R.G. Kuhn
Sierra Club of Alberta ..... Mr. H. Zenger
Society for the Protection of Architectural
Resources in Edmonton (SPARE) ..... Mr. B. Wyness
Solar Energy Society (Calgary Chapter) .... Dr. J.E. Rapson
Southern Alberta Environmental Group .... Mr. G.R. Stewart
Strathcona Industrial Association ..... Mr. R.J. Gillespie
Swift Fox Conservation Society ..... Mr. C. Schroeder
Trout Unlimited ..... Dr. B. Dancik
Unifarm ..... Mrs. E. Friesen
United Farmers of Alberta
Co-operative Ltd. ..... Mr. C. Fawcett
University Womens' Club of Edmonton
(Canadian Federation
of University Women) ..... Ms. L. Renouf
Urban Development Institute of Alberta .... Mr. F. Markson
Western Barley Growers' Association ..... Mr. H. Craig
Western Stock Growers' Association ..... Mr. E. Jarvis
Wildlife Society of Canada ..... Ms. R. Usher
Women of Unifarm ..... Mrs. M. Newton
YWCA ..... Mrs. R. Robinson

Educational Institutions and Representatives

Athabasca University	Dr. R.G. Holmberg
Canadian Union College	Dr. P. Ramalingam
Cascade Society of Mount Royal College	Mr. G. Ferguson
Concordia College	Dr. S. Dalton
Fairview College	Mr. T. Garner
Grande Prairie Regional College	Dr. J. Snyder
Keyano College	Mr. P. Rudiak
Lakeland College — Vermilion Campus	Dr. M.H. Chaudhry
Lethbridge Community College	Mr. B. Meller
Medicine Hat College	Dr. R. Mutch
Mount Royal College	Dr. K. Cummins
Northern Alberta Institute of Technology	Dr. W. Buchta
Olds College	Mr. R.A. Hill
Red Deer College	Mr. G. Fabris
Southern Alberta Institute of Technology	Mr. M. Homan
University of Alberta	Dr. T.L. Burton
University of Alberta	Mr. M. Henderson
University of Calgary	Mr. W.A. Ross
University of Lethbridge	Dr. J. Harter

Non-Sponsored Members

The current list of unaffiliated members follows:

Mrs. S. Abercrombie
Dr. L. Bakshi
Mr. K.J. Blom
Mrs. D. Broadbent
Mr. W.D. Broughton
Mr. K. Driver
Mr. A.C. Dunkley
Mr. W.A. Flook
Ms. J. Hedenstrom
Dr. M. Kostuch
Mr. E. Kure
Mrs. E. Paschen
Dr. K. Pennifold
Mr. R.M. Richardson
Mr. W.K. Ross
Dr. R. Scace
Mr. G. Stewart
Mr. N.S. White
Dr. J.C. Wood

Science Advisory Committee Members

Dr. C.F. Bentley
Dr. H. Buckmaster
Dr. S. Dalton
Dr. W.A. Fuller
Ms. M. Haag
Dr. J. Hackler
Ms. L.P. Horstman
Dr. F. Kozar
Dr. D. Kvill
Dr. R.K. Lane
Dr. P. Mahaffy
Dr. W. Moser
Dr. R.P. Pharis
Dr. W.E. Phillips
Dr. B. Rogers
Dr. R. Swanson
Dr. D. Thompson
Dr. W.H. VandenBorn
Dr. T.S. Veeman
Mr. W. Wishart
Dr. P. Woodard

Environmental Education Advisory Committee Members

Ms. M. Bailey
Mr. B. Batycky
Ms. E. Beaubien
Dr. A.A. Einsiedel, Jr.
Mrs. J. Finlay
Dr. J. Godfrey
Mr. J. Martin
Mr. D. Merrills
Mr. R. Mrazek
Mr. B. Ogston
Dr. W. Samiroden
Mr. D. Spalding
Mr. D. Stoker
Mr. B. Wylie
Ms. W. Zelt

APPENDIX B.

LIST OF PUBLICATIONS

December 1987

BROCHURES

Environment Council of Alberta. July 1983.
Public Hearings.
What in the World is a Conservation Strategy?

LEGISLATION

The Environment Council Act. Chapter E-13, R.S.A. 1980.

ANNUAL REPORTS

Environment Council Annual Report, 1982.
Environment Council Annual Report, 1983.
Environment Council Annual Report, 1984.
Environment Council Annual Report, 1985.
Environment Council Annual Report, 1986.

PUBLICATIONS RELATED TO PUBLIC HEARINGS

The Conservation of Historical and Archaeological Resources in Alberta.

Report and Recommendations. June 1973.

The Use of Pesticides and Herbicides in Alberta.

Terms of Reference. September 1974.

Erosion of Land in Northwestern Alberta.

Anthropogenic Erosion, Swan Hills, Alberta. (2nd edition) January 1976.
Report and Recommendations. November 1976.

Continued Public Hearings into the Flow Regulation of the Red Deer River.

Terms of Reference and Background Information. December 1976.
Report and Recommendations. June 1977.

Environmental Effects of Forestry Operations in Alberta.

Terms of Reference and Background Information. September 1977.
The Environmental Effects of Timber Production in Alberta: An Overview. August 1977.
The Environmental Effects of Timber Production in Alberta: Institutional and Legislative Analysis. August 1977.
Potential for Biomass Energy Production in Alberta Based on Timber Resources. 1977.
The Environmental Effects of Timber Harvesting in Alberta: A Summary. 1973.
Perspectives I: The Forestry Industry in the Peace River Region of Alberta. September 1977.
Perspectives II: The Forestry Industry in Alberta. November 1977.
Forest Recreation in Alberta. March 1978.
Report and Recommendations. February 1979.

Management of Water Resources within the Oldman River Basin.

Terms of Reference and Background Information. September 1978.
Report and Recommendations. August 1979.

The Management and Disposal of Hazardous Waste.

Background Information for the Public Hearings on the Management and Disposal of Hazardous Waste. January 1980.
The Administration and Regulation of Hazardous Waste. January 1980.
Report and Recommendations. December 1980.

Noise in Alberta.

Noise: Transportation Noise. (Brochure) September 1980.
Noise: Planning Considerations. (Brochure) September 1980.
Noise in the Workplace. January 1981.
Economic Aspects of Noise in Alberta. September 1980.
Report and Recommendations. July 1982.

Maintaining and Expanding the Agricultural Land Base in Alberta.

Factors Affecting Summerfallow Acreage in Alberta. August 1981.
Factors Affecting Summerfallow Acreage in Alberta: Summary. August 1981.
The Agricultural Land Base in Alberta. August 1981.
The Agricultural Land Base in Alberta: Summary. November 1981.
Agricultural Land and Land Use Planning in Alberta: A Review of Planning Legislation and Practices. October 1981.
Agricultural Land and Land Use Planning in Alberta: Summary and Issues. November 1981.
Agriculture and the Environment. November 1981.
Agriculture and the Environment: Summary. March 1982.
Urbanization of Agricultural Land. December 1981.
Urbanization of Agricultural Land: Summary. December 1981.
Rural Subdivision in the Edmonton, Battle River, Red Deer, and Calgary Regional Planning Commissions, 1977 to 1979. February 1982.
Irrigation Agriculture in Alberta. March 1982.
Irrigation Agriculture in Alberta: Summary. March 1982.
Dryland Salinity in Alberta. March 1982.
Options for Protecting Agricultural Land. April 1982.
Soil Fertility and Land Productivity in Alberta. July 1982.
The Economics of Agriculture in Alberta: Selected Issues. July 1982.
A Summary of The Economics of Agriculture in Alberta: Selected Issues. July 1982.
An Analysis of Legislation Affecting Agricultural Land in Alberta. July 1982.
Soil Fertility, Land Productivity and Dryland Salinity in Alberta: Summary. September 1982.
Agriculture and Public Land Management in Alberta. August 1982.
Greenhouse Production in Alberta. September 1982.
Maintaining and Expanding the Agricultural Land Base in Alberta: Terms of Reference and Background Information. July 1982.
The Impacts of Linear Developments, Resource Extraction, and Industry on the Agricultural Land Base. October 1982.
The Impacts of Linear Developments, Resource Extraction, and Industry on the Agricultural Land Base: Summary. October 1982.
Recreation on Agricultural Land in Alberta. November 1982.
Recreation on Agricultural Land in Alberta: Summary. November 1982.
Research and Agricultural Productivity in Alberta. September 1982.
An Analysis of Agricultural Research and Productivity in Alberta. January 1983.
Agricultural Land Protection Mechanisms in Canada. March 1983.
Summary Report and Recommendations. December 1984.
Technical Report and Recommendations. March 1985.

Recycling of Waste in Alberta.

The Use of Municipal Waste as Fuel. March 1983.
Resource Recycling in Alberta. November 1985.
Economic Barriers to Recycling. November 1985.
Municipal Solid Waste — Alberta's Untapped Resource? November 1985.
Garbage to Gold? Issues and Opportunities. December 1985.
A Social Perspective of Recycling. January 1986.
Bibliography of Recycling. February 1986.
Technical Report and Recommendations. March 1987.
Summary Report and Recommendations. April 1987.

SPECIAL REPORTS

Review of Interaction Between Migratory Birds and Athabasca Oil Sands Tailings Ponds. September 1975.
Economic Viability of Increased Beef Feeding in Alberta. 1979.
Noise and the Human Environment. Volume 1, December 1979; Volume 2, March 1980.
Risks Associated with the Transportation to Treatment of Hazardous Waste Substances. Phase I. (Volume 1/2); *Phase II.* (Volume 2/2). December 1980.

Public Perceptions of the Environment in Alberta. January 1981.

Environmental Standards: A Comparative Study of Canadian Standards, Standard Setting Processes and Enforcement. September 1983.

Report of the National Task Force on Environment and Economy. September 1987.

STAFF REPORTS

Health Effects from Kraft (Sulphate) Pulp Mill Operations. September 1976.

The Camrose-Ryley Project Proposal (1975). A Preliminary Assessment of the Surface Reclamation Potential on the Dodds-Roundhill Coalfield. April 1977.

Attitudes Toward the Environment: A Comparison of Six Surveys Spanning Six Years. February 1982.

Wildlife Roadkills and Potential Mitigation in Alberta. February 1983.

Acid-Forming Emissions — Transportation and Effects. March 1984.

Alberta's Clean Air Act. March 1985.

Alberta's Clean Water Act. March 1985.

OCCASIONAL PAPERS

What is a Conservation Strategy? September 1986.

Environment and Development: An NGO Viewpoint. March 1986.

Improving Enforcement of The Clean Air Act and The Clean Water Act. September 1987.

CONFERENCES AND MEETINGS

Involvement and Environment: Proceedings of the Canadian Conference on Public Participation. Volume 1. September 1978; Volume 2. May 1979.

Public Participation in Environmental Decision Making: Strategies for Change. 1979.

Reactions to the Public Participation Workshop, March 5, 1981. May 1981.

Proceedings 10th Annual Joint Meeting of the Canadian Environmental Advisory Council. September 1986.

Forest Land Use Workshop. June 1987.

PUBLIC ADVISORY COMMITTEE ON THE ENVIRONMENT

Public Advisory Committees to the Environment Council of Alberta. (Brochure) December 1982.

Proceedings of the 1982 Annual Joint Meeting.

1981-82 Resolutions Passed at the Eleventh and Twelfth Annual Joint Meetings.

1984 Proceedings.

1984 Chairmen's Reports.

1984 Resolutions.

1985 Proceedings.

1985 Chairmen's Reports.

1985 Resolutions.

Roles Document: Public Advisory Committee on the Environment. September 1978.

Prospectus for an Alberta Conservation Strategy. (Revised) March 1987.

SCIENCE ADVISORY COMMITTEE

Trace Elements in Coal: A Review. March 1981.

APPENDIX C.

LOCATION OF INFORMATION CENTRES

Banff

The Banff Centre
Box 1020
Banff, Alberta
T0L 0C0

Blairmore

Blairmore Municipal Library
Blairmore, Alberta
T0K 0E0

Bonnyville

Bonnyville Municipal Library
Box 1438
Bonnyville, Alberta
T0A 0L0

Brooks

Brooks Pubic Library *
Box 1149
Brooks, Alberta
T0J 0J0

Calgary

Calgary Public Library *
Business and Science
616 McLeod Trail SE
Calgary, Alberta
T2G 2M2

Calgary Regional Planning Commission
4303 - 11 Street SE
Calgary, Alberta
T2G 4X1

Collection Room *
Dept. of Geography
University of Calgary
2920 - 24 Avenue NW
Calgary, Alberta
T2N 1N4

Environmental Design Unit *
8th Floor, Library Tower
University of Calgary
2920 - 24 Avenue NW
Calgary, Alberta
T2N 1N4

The Library *
Mount Royal College
4825 Richard Road SW
Calgary, Alberta
T3E 6K6

Resource Centre Office
Faculty of Evironmental Design
Room 1003A
Earth Science Building
University of Calgary
2920 - 24 Avenue NW
Calgary, Alberta
T2N 1N4

Camrose

Camrose Public Library
4863 - 50 Street
Camrose, Alberta
T4V 0P6

Canmore

Canmore Public Library
Box 460
Canmore, Alberta
T0L 0M0

Carstairs

Carstairs Library
Box 128
Carstairs, Alberta
T0M 0N0

Coronation

Coronation Community Library
Coronation School
Coronation, Alberta
T0K 1C0

Drumheller

Drumheller Public Library *
Box 1599
Drumheller, Alberta
T0J 0Y0

Edmonton

Alberta Environment Library *
14th Floor, Oxbridge Place
9820 - 106 Street
Edmonton, Alberta
T5K 2J6

Alberta Legislature Library
Room 216
Legislature Building
Edmonton, Alberta
T5K 2B6

Edmonton Regional Planning Commission Library
602, 10025 - 106 Street
Edmonton, Alberta
T5J 1G6

Government Publications *
University of Alberta Library
Edmonton, Alberta
T6G 2J8

Edson

Edson Public Library
Box 249
Edson, Alberta
T0E 0P0

Fort McMurray

Fort McMurray Public Library

* Has a complete set of proceedings of public hearings.

9912A Franklin Avenue
Fort McMurray, Alberta
T9H 2K6

Grande Prairie

Grande Prairie Public Library
10032 - 100 Avenue
Grande Prairie, Alberta
T8V 0V3

Grande Prairie Regional College Library *
10726 - 106 Avenue
Grande Prairie, Alberta
T8V 4C4

South Peace Regional Planning Commission *
Resource Centre
200 Windsor Court
9835 - 101 Avenue
Grande Prairie, Alberta
T8V 0X6

Hinton

Hinton Municipal Library
Box 818
Hinton, Alberta
T0E 1B0

Lacombe

Parkland Regional Library
Alberta Agriculture Building
Lacombe, Alberta
T0C 1S0

Lacombe Public Library
Lacombe, Alberta
T0C 1S0

Lethbridge

Buchanan Resource Centre *
Lethbridge Community College
Lethbridge, Alberta
T1K 1L6

Government Documents Office
University of Lethbridge Library
Lethbridge, Alberta
T1K 3M4

Lethbridge Public Library *
810 - 5th Avenue S
Lethbridge, Alberta
T1J 4C4

Library
Oldman River Regional Planning Commission
905 - 4th Avenue S
Lethbridge, Alberta
T1J 4E4

Olds

Olds Municipal Library
Box 968
Olds, Alberta
T0M 1P0

Peace River

Peace River Municipal Library
9807 - 97 Avenue
Peace River, Alberta
T0H 2X0

Red Deer

Red Deer Public Library *
4818 - 49 Street
Red Deer, Alberta
T4N 1T9

Red Deer Regional Planning Commission Library *
2830 Bremner Avenue
Red Deer, Alberta
T4R 1M9

Reader's Service Librarian
Red Deer College Library
56 Avenue & 32 Street
Red Deer, Alberta

Sherwood Park

County of Strathcona Municipal Library
Government Documents Section
2001 Sherwood Drive
Sherwood Park, Alberta
T8A 3J4

Spruce Grove

Spruce Grove Public Library
Box 2759
Spruce Grove, Alberta
T0E 2C0

Vegreville

Vegreville Public Library
Box 129
Vegreville, Alberta
T0B 4L0

Vermilion

Lakeland College Library *
Vermilion, Alberta
T0B 4M0

Vermilion Public Library
Box 476
Vermilion, Alberta
T0B 4M0

Westlock

Westlock Municipal Library
Box 1198
Westlock, Alberta
T0G 2L0

Wetaskiwin

Battle River Regional Planning Commission Library *
5014 - 48 Avenue
Wetaskiwin, Alberta
T9A 0M9

Whitecourt

Whitecourt Public Library *
Box 150
Whitecourt, Alberta
T0E 2L0

* Has a complete set of proceedings of public hearings.

APPENDIX D

LOG OF NEWS RELEASES

February 16, 1987 — EVDS Professors Meet with Urban Environment Advisory Group

In this province at present, says the University of Calgary's Dean of Environmental Design, the activity of putting up a new shopping center is the whole reason for doing it.

February 26, 1987 — Conflicting World Views Studied by U of A Geographer

A widening gap where environmental views are concerned, between our decision makers and a majority of the general public, is the apparent cause of a communications failure between the two groups, suggests Dr. Ed Jackson, an Associate Professor of Geography at the University of Alberta.

March 24, 1987 — Sour Gas Makes Friendly "Enemies" (with photo)

Sundre Area resident Mary Goodwin shares a lighter moment with Canterra Energy spokesman Barry Worbets at a recent Environment Council of Alberta meeting in Edmonton. On opposing sides when the gas production company was seeking permission to drill its exploratory high-sulphur well near Sundre last year, they described the concerns of local residents to an ECA advisory group.

April 13, 1987 — Soil Conservation Week Observance

It may be "old hat" to say, where farming is concerned, that good conservation practices make good business practices, but an ECA advisory group claims this particular old hat should be trotted out and put on parade, and Soil Conservation Week, April 13 to 17, is a good time to do it.

May 5, 1987 — ECA Releases its Report on Recycling in Alberta

Even though they're nearly all in favor of turning garbage into gold, most Albertans keep right on turning their gold into garbage, says one of the authors of a new report on recycling.

May 31, 1987 — ECA's On-Line Service Now Goes 24 Hours

It's still thought to be the first of its kind in Canada. And now, during Environment Week '87, it begins a new expanded service here in Alberta.

September 16, 1987 — Kowalski Asked to Lay Charges

An environmental advisory committee wants Environment Minister Ken Kowalski to lay charges against those responsible for dumping and burning six truckloads of discarded pesticide containers in a slough near Stettler last April 29.

October 1, 1987 — Educators Support New Report on Environment

Advisors to the Environment Council of Alberta are saying they whole-heartedly support a national task force that has called for an action plan to upgrade environmental education programs right across the country.

October 6, 1987 — Good Environmental News Is Not News?

A veteran member of the environmental lobby in Alberta is upset because a watershed accord on environmental protection between politicians and industry leaders has gone almost unnoticed by most of the news media.

In fact, if Jean Sloan could have her way, people would be dancing in the streets. But, people aren't dancing, says Sloan, because they haven't heard the news yet.

November 12, 1987 — De-Gas Your Water Well, Save Money, Environment Too?

If your water well seems to have "lumpy water" in it, maybe it's time to get the gas out, for safety's sake, and perhaps to save money too.

Many of Alberta's rural residents, farmers and ranchers, as well as acreage and rural subdivision owners, often discover natural gas coming through their water systems.

December 29, 1987 — Draft Conservation Strategy for Alberta is Due in 1988

One of Alberta's prime environmental advocates says a "massive effort by all sectors of society" is presently underway in Alberta "to improve and safeguard our land, air, water and all life, human and otherwise."

This effort, says Jean Sloan, should result in a first draft of an Alberta Conservation Strategy being completed in "the coming year."